

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Attorney Docket No. 054103/0101

On re Reissue Application of

Satoshi KONO *et al*

Group Art Unit: 3682

U.S. Patent No: 5,465,635

Examiner: V. Luong

Reissue Serial No: 08/629,547

Reissue Filed: April 9, 1996

For: FLYWHEEL ASSEMBLY FOR INTERNAL COMBUSTION ENGINE (as revised)

#53/ Appeal  
Brief  
4-4-02  
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**RECEIVED**  
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**GROUP 3600**

**BRIEF ON APPEAL**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

This Appeal Brief is being filed in triplicate together with a check in the amount of \$320.00 covering the appeal fee. Appellants hereby appeal the decision of the rejection dated **October 29, 2001** to the Board of Patent Appeals and Interferences. The Primary Examiner finally rejected product claims 113-165.

**REAL PARTY IN INTEREST**

The real party in interest is Valeo Unisia Transmissions K.K. An assignment recordation to be filed with the Patent Office is being prepared and will be filed shortly.

**RELATED APPEALS AND INTERFERENCES**

Appellants are unaware of any related appeal or interference.

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### **STATUS OF CLAIMS**

Claims 101 to 165 are pending. A copy of the pending claims is presented in the APPENDIX.

Claims 101 to 112 correspond to original patent claims 1 to 12 and have been indicated as allowable. See, e.g. the February 24, 2000, final Office Action at paragraph 9. Thus, these claims are not at issue.

Claims 113 to 165 were finally rejected under 35 U.S.C. § 251 as allegedly representing an impermissible recapture of broadened claimed subject matter.

No claims stand rejected over prior art.

### **STATUS OF AMENDMENTS**

An Amendment under 37 CFR § 1.111 was filed on August 13, 2001, canceling method claims 69-100 and reintroducing product claims 101-165. The restriction requirement was withdrawn in the Office Action dated October 29, 2001. No other amendments have been filed subsequent to the Amendment filed on August 13, 2001.

### **SUMMARY OF INVENTION**

The claimed invention is directed to a flywheel assembly for the crankshaft of an internal combustion engine. Flywheel assemblies for reducing torsional vibration generated in the direction of rotation are known in the art. ('635 patent at column 1, lines 24 to 28). If the flywheel is attached directly to the crankshaft, then the flywheel itself can generate flexural or bending vibration, which manifests itself during acceleration as a heavy or thick noise in the engine compartment and passenger compartment of a vehicle. ('635 patent column 1, lines 28-33.) Another arrangement of the flywheel/crankshaft assembly includes the flywheel connected to the crankshaft through an elastic or flexible plate. ('635 patent column 1, lines 34-45.) While this overcomes the above-noted problems of noise, if the axial rigidity of the elastic plate is too low, then excess clutch travel occurs which can

result in stalling upon disengagement. ('635 patent column 1, lines 48-55.) However, if the axial rigidity of the elastic plate is too high, the deviation of the resonance frequency of the bending vibration from the target frequency band of the forced vibration may not occur resulting in the aforementioned problems of noise. ('635 patent column 1, lines 55-59.)

One aspect of the present invention relates to providing a flywheel assembly that includes an elastic plate having an axial rigidity sufficient to transmit driving power to the transmission, but low enough to attain the deviation of the resonance frequency of the bending vibration from the target frequency of forced vibration. This is accomplished by setting the axial rigidity of the elastic plate to 600 kg/mm to 2200 kg/mm, with an axial displacement of not more than 1 mm when an axial load of 600 to 2200 kg/mm is applied. ('635 patent column 4, lines 38-55.)

An embodiment of the flywheel assembly is shown in Figure 1. The assembly includes crankshaft 1, elastic plate 2, reinforcing member 4 and flywheel body 5. Figure 1 shows that the elastic plate 2 is held on the crankshaft 1 by reinforcing member 4 and bolts 3. ('635 patent column 3, lines 55-64.) The reinforcing member 4 includes a radially extending section 4b (flange). ('635 patent column 3, lines 64-67.) At the inner diameter of the flywheel, gaps or clearances are provided to allow axial movement of the flywheel plate. That is, radial section 4b is spaced from the flywheel and defines a space for axial movement of the flywheel, while the inner surface 5f of the flywheel facing the elastic plate is spaced apart from the elastic plate to ensure elasticity of the plate. ('635 patent column 4, lines 12-21.)

### ISSUES

The sole issue presented for review is whether the reissue recapture doctrine prohibits the elimination of a small portion of a claim limitation adding during prosecution, where that small portion was not highlighted in the specification as being important, was not argued by Appellants at any time during examination and was not relied upon by the PTO as a basis for patentability, and where the major portion of the claim limitation added during original prosecution remains in the reissue claims and substantially claims the same structure and structural relationship as the patent claims, including the essential features on

which patentability was based. In other words, do the facts constitute “recapture” at all, and if so, do they create a situation of impermissible or permissible reissue recapture?

### GROUPING OF CLAIMS

Claims 113-165 all present the same recapture issue, and for the purpose of this appeal only, Appellants are willing to have them considered together.

### SUMMARY OF THE ARGUMENT

The PTO in this case takes a rigid, overly broad position, relying at least in part on The Patent and Trademark Office’s Memorandum from Stephen G. Kunin dated September 21, 1999, entitled Guidelines for the Application of the Recapture Rule to Reissue Applications (hereinafter referred to as “the Reissue Guidelines,” attached as Exhibit D), that every claim limitation added during prosecution to gain allowance of the claim is *ipso facto* “surrendered” subject matter and, consequently, any broadening of such a claim limitation is automatically subject to reissue recapture. See, e.g., the February 24, 2000, Office Action at page 9.<sup>1</sup> This position of the PTO is contrary to controlling case law. Moreover, the PTO’s factual determination regarding the nature of the differences in claim scope between the reissue and patented claims is also incorrect in this case. For both reasons, the PTO’s legal conclusion that impermissible reissue recapture has occurred in this case is incorrect.

Appellants’ reissue seeks to correct an error made during prosecution of the original application by slightly broadening one limitation. Original patent claims 1 and 8 include a limitation added during prosecution that defines (1) the order of the elastic plate vis-à-vis the reinforcing member; and (2) the axial movement of the flywheel first portion axially within clearances or spaces on either side of the flywheel. In particular, the clearances or

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<sup>1</sup> The Reissue Guidelines state at page 2: “If the limitation now being omitted or broadened in the present reissue was originally presented/argued/stated in the original application to make the claims allowable over a rejection or objection made in the original application, the omitted limitation relates to subject matter previously surrendered by applicant, and impermissible recapture exists.” As will be seen below, this broad statement is internally inconsistent with much of the ensuing Guidelines.

spaces were defined during the original prosecution using the then-required claim drafting practice that discouraged direct claiming of intangible elements. Thus, to define the intangible “clearances” or “spaces” for permitting axial movement of the flywheel, Applicants conventionally recited tangible structure including a “first portion” of a “reinforcing member,” i.e., flange 4b. This is the error sought to be corrected. This tangible structure of flange 4b is not characterized in the specification as being an important part of the invention or even as having any function (other than defining a space). Appellants did not argue flange 4b as a basis for patentability of claims 1 and 8, and the prosecution record does not indicate that the PTO relied upon flange 4b in finding the claims allowable. It was the clearance or space that Appellants argued as an important feature of the claimed invention, and the clearance or space is still claimed in the reissue claims on appeal. Appellants did not surrender a structure without the flange 4b, but rather only structures that do not include only the axial clearance space. Flange 4b is recited in the original patent claims only because PTO practice previously required “void spaces” to be defined in terms of actual structure, such as flange 4b.

Reissue claims 113 and 128 still claim (1) the order of the elastic plate vis-à-vis the reinforcing member; and (2) the axial movement of the flywheel first portion axially within clearances or spaces on either side of the flywheel. The only difference is that Appellants are no longer using the tangible reinforcing member first portion (flange 4b) to define the space or clearance. Instead, claims 113 and 128 directly claim the intangible element or void space as “a first free space,” i.e., in a manner now permitted under less rigid PTO practice. Thus, the limitation added during prosecution to gain allowance of the application (i.e., defining the order of the elastic plate, vis-à-vis the reinforcing member, and the axial movement of the flywheel first portion axially within clearances or spaces on either side of the flywheel) is still being claimed in substantially the same manner. Consequently, the patent claims and reissue claims are not significantly different in scope, i.e., Appellants are not trying to recapture claims of the same or substantially the same scope as claims canceled during original prosecution, nor are they trying to recapture any “surrendered” subject matter.

Even applying the PTO’s restrictive interpretation of the recapture case law as set forth in the final Office Action and the February 13, 2001, Office Action, the very minor

difference between the reissue claims and the patent claims (flange 4b) does not represent “surrendered” subject matter, and as a result, there can be no impermissible recapture because there is no recapture of surrendered subject matter.

Furthermore, even if the eliminated limitation at issue were to be considered, *arguendo*, as surrendered subject matter (which it is not), under binding CCPA and Federal Circuit precedent there is still no impermissible recapture, because the limitation remaining (i.e., considered as “added” vis-à-vis the canceled claim) has a material aspect to it in that it is, in fact, the very same subject matter that was argued and accepted by the PTO during prosecution of the original patent as defining over the prior art (i.e., Japanese Publication No. 57-058542, hereafter “Numata ‘542”). In other words, the reissue claims are allowable for the same reasons that the original patent claims defined over that prior art. By definition, therefore, this “added” subject matter is both “material” and “germane” to the original PTO rejection in the original patent prosecution.

Moreover, the facts of the present application fall squarely within case law precedent, such as *In re Richman*, 409 F.2d 269, 161 USPQ 359 (CCPA 1969), that is still authoritative and is binding on the PTO and Federal Circuit panels.

The PTO’s position, which can be summed up as finding impermissible recapture whenever a limitation adding during prosecution is broadened, without even considering the issues of surrender or materiality, is legally in error. The recapture rejection based on this erroneous legal position should be reversed.

## ARGUMENT

### **I. Background**

#### **A. The Law of Recapture**

The “recapture doctrine” or “recapture rule” is applied to prevent a “patentee from acquiring, through reissue, claims that are of the same or of broader scope than those claims that were cancelled from the original application.” *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 294-95 (Fed. Cir. 1984) (emphasis added).

If the reissue claim is narrower than the claim originally presented, then the recapture rule is not a bar. *Id.* See also, Reissue Guidelines, page 4.

In cases where the reissue claims are broader in some aspects and narrower in other aspects, the Federal Circuit has stated: “[r]eissue claims that are [as broad or] broader in certain respects and narrower in others [vis-à-vis the canceled claim] may avoid the effect of the recapture rule. If a reissue claim is broader in a way that does not attempt to reclaim what was surrendered earlier, the recapture rule may not apply.” *Mentor Corporation v. Colorplast*, 998 F.2d 992, 996, 27 USPQ2d 1521 (Fed. Cir. 1993). This fundamental view of the reissue recapture rule is also confirmed in the Reissue Guidelines” at page 4 (“[r]eissue claims that are broader in certain aspects and narrower in others vis-à-vis claims canceled from the original application to obtain a patent may avoid the effect of the recapture rule if the claims are broader in a way that does not attempt to reclaim what was surrendered earlier”).

The Federal Circuit has stated that, if added limitations “narrow the claims in any *material aspect* compared with their broadening,” then the reissue claim is broader in a way that does not attempt to reclaim what was surrendered earlier, and the recapture rule should not apply. *Mentor*, 998 F.2d at 996. This constitutes permissible reissue recapture.

Section 1412.02 of the seventh edition of the Manual of Patent Examining Procedure (the “MPEP”), which provides relevant guidelines binding on the PTO for consideration of “recapture” issues under 35 U.S.C. 251, instructs:

Where such [reissue] claims also include some narrowing limitation not present in the claims deliberately canceled in the application, the examiner must determine whether that narrowing limitation has a *material* aspect to it. ***If the narrowing limitation has a material aspect to it, then there is no recapture.*** However, if the narrowing limitation is incidental, mere verbiage, or would be inherent even if not recited (in view of the specification), then the claims should be rejected under 35 U.S.C. 251. (emphasis added)<sup>2</sup>

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<sup>2</sup> The present case is clearly and unequivocally governed by the instructions given to Examiners in the version of MPEP that governs this application (MPEP, 7<sup>th</sup> Ed. 1998, § 1412.02). The MPEP expressly cites and is based on the *Ball Corp.* and *Clement* cases. No significant Federal Circuit decisions changing the law have occurred since the *Clement* case (1997) or publication of the seventh edition or the latest version of the M.P.E.P. (2001) that would serve as a basis for disregarding the PTO's own manual. Moreover, it is understood that the PTO is bound by the guidelines set forth in the MPEP. *In re Kaghan*, 387 F.2d 398, 156 USPQ 130 (CCPA 1967).

Thus, the MPEP clearly instructs that, in cases where there is both broadening and narrowing of a reissue claim vis-à-vis the canceled claim, one looks to determine whether the narrowing limitation added to the reissue claim is *material*. This is consistent with Federal Circuit precedent in *Mentor* and every decision by that court subsequent to *Mentor* (1993). Furthermore, these guidelines make clear that any limitation that is not merely “incidental” or “inherent” must be considered as “material.”<sup>3</sup>

It is also fundamental that a consideration of the materiality of the added limitation involves evaluation of the scope of the claim as a whole. The Federal Circuit and its predecessor court, the Court of Customs and Patent Appeals, have consistently held that, in recapture situations, “the focus is not [ ] on the specific limitations or on the elements of the claims but, rather, on the scope of the claims.” (emphasis added). *Ball Corporation*, 729 F.2d at 1436.<sup>4</sup> Thus, when reviewing the claims under the recapture doctrine, the reissue claim is examined, as a whole, to determine if the narrowing limitation materially narrows the reissue claim, or if the reissue claim is attempting to reclaim what was surrendered earlier, *i.e.*, a non-material limitation effectively results in a claim that is of the “same scope” as the originally-presented and deliberately canceled claim.

The materiality aspect of the narrowing limitation was stated somewhat differently in *In re Clement*, 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997). In *Clement*, the Federal Circuit noted that, in examining a narrowing limitation, it must be determined if the narrowing limitation is “germane to a prior art rejection.” However, the most recent decision from the Federal Circuit in July of 2001 leaves no doubt that the formulation in *Clement* is nothing more than a determination of whether the narrowing limitation is “material.” *Pannu v. Storz Instruments, Inc.*, 258 F.3d 1366, 59 USPQ2d 1597 (Fed. Cir. 2001). In *Pannu*, the Federal Circuit laid out that a recapture analysis involves three steps, *viz*:

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<sup>3</sup> The latest edition of the MPEP (8<sup>th</sup> ed. 2001), published after the filing date of the present reissue application, states at page 1400-15 that if the “narrowing limitation modifies the claims in such a manner that the scope of the claim no longer results in surrendered subject matter, then there is no recapture.” (emphasis added). For the reasons noted in this brief, even applying this somewhat vaguer test, the claims on appeal do not recapture “surrendered” subject matter.

<sup>4</sup> Even *Hester*, which did not involve any claim amendments but rather only arguments, made this clear: “Williams, through his admission effected by way of his repeated prosecution arguments, surrendered claim scope that does not include these limitations.” (emphasis added) 142 F.3d at 1482.



- (1) determine whether and in what aspect the reissue claims are broader than the patent claims;
- (2) determine whether the broader aspects of the reissue claim relate to surrendered subject matter; and
- (3) determine whether the reissued claims were materially narrowed in other respects to avoid the recapture rule [citing *Hester indus., Inc. v. Stein, Inc.*, 142 F.3d 1472, 1482-83, 46 USPQ2d 1641, 1649-50 (Fed. Cir. 1998) and *Clement*]. *Pannu*, 258 F.3d at 1369, 59 USPQ2d at 1600 (emphasis added).

Another important principle in applying the recapture rule is the prohibition against focusing solely on the feature or limitation being removed from the reissue claim. The Federal Circuit has explicitly indicated that it was not adopting this principle applied previously by some circuit courts of appeals and was instead adopting a more liberal approach taken by the Court of Customs and Patent Appeals. The Federal Circuit stated that “[w]e decline to adopt the rigid standard [of focusing solely on the feature or limitation being removed] applied in *Riley*, in favor of the more liberal approach taken by the CCPA”. *Ball Corp.*, 729 F.2d at 1435.

**B. The Error Being Corrected Here Occurred in View of Older Claiming Rules for Claiming an Intangible Element**

As described in the Summary, Appellants are seeking to correct an error made without deceptive intent during prosecution of the original application. Original patent claims 1 and 8 had a limitation added during prosecution that eventually resulted in allowance of the claim. The limitation at issue in original patent claims 1 and 8 is:

wherein each of said elastic plate, said flywheel body and said ***reinforcing member comprises a first portion***, said first portion of said flywheel body being placed axially between said first portions of said elastic plate and said reinforcing member, and said ***first portions of*** said elastic plate, said flywheel body and ***said reinforcing member defining clearances*** for allowing said first portion of said flywheel body to move axially between said first portions of said elastic plate and said reinforcing member.

(emphasis added). See column 7, line 60 to column 8, line 2; and column 9, lines 3 to 12 of the ‘635 patent. This claim limitation, added during prosecution of the original

application, (1) defines the order of the elastic plate vis-à-vis the reinforcing member; and (2) the axial movement of the flywheel first portion axially within clearances or spaces on either side of the flywheel. See the amendment filed under Rule 1.196(b) and the March 27, 1995 amendment (enclosed as Exhibits A and B, respectively).

As to aspect (2), the added claim limitation, reproduced above, recites each of the elastic plate, flywheel body and the reinforcing member having first portions that *define clearances* for allowing the first portion of the flywheel body to move axially between the first portions of the elastic plate and the reinforcing member. Aspect (1) defines the axial order of the elastic plate and reinforcing element. In other words, this particular limitation added by amendment defines elements (i.e., the clearances) that allow for axial movement of the flywheel body, as well as the axial order of the components. This was to further distinguish over Numata '542 which taught a plate member 24 (i.e., corresponded to a reinforcing element) disposed entirely on the opposite side of the elastic plate 3 from the flywheel body. See pages 9 and 10 of the Rule 196(b) amendment.

In defining the clearances or spaces for axial movement of the flywheel in this added limitation, Appellants were following older conventional U.S. claim drafting practice that discouraged direct claiming of “intangible” elements such as void spaces or apertures, without physical structure. For example, under older claim drafting practice it was generally prohibited to claim a “hole” per se. Instead, it was necessary to claim physical structure that would define the “hole,” e.g., “a rod having a hole at one end.” See e.g., *In re Hall*, 77 USPQ 618, 168 F.2d 92 (CCPA 1948) (noting that “[t]he word ‘space’ in our opinion can not be considered anything tangible. It is something without limits or might be aptly described as ‘nothing.’”). See also, *Ex Parte Davin*, 1902 CD 251 (holding that “[a]n ‘opening’ should not be made a positive or direct element in combination claims, for the reason that *an opening is not a tangible thing*. It can exist only in connection with some other element.). This was precisely the situation appellants were faced with when defining the clearances for the movement of the flywheel body. That is, rather than defining the clearances directly (particularly the clearance between the reinforcing member and flywheel body, the clearances were defined in terms of the *first portions* of the flywheel body, the elastic plate and the reinforcing members.

Aside from defining the axial order of the elastic plate vis-à-vis the reinforcing element, these portions, particularly the reinforcing element first portion, add nothing to the claim other than to define the “structure” of the clearances. This is particularly evident from the description in the specification of the first portion (flange) 4b of the reinforcing member. Specifically, column 4, lines 14 to 17, states “... the radial section 4b of the reinforcing member 4 is spaced from the second section 5d of the flywheel body 5 by a predetermined distance *for allowing an axial movement* of the flywheel along with elastic plate 2” (emphasis added). It is clear from this passage, and the rest of the specification, that the only intended function of the reinforcing element radial section 4b or first portion is to define the clearance for allowing movement of the flywheel body. Accordingly, it was in error for Appellants, relying on now outdated claiming convention, to define an intangible element (i.e., the clearance after the flywheel body first portion) by reciting an otherwise unnecessary tangible element (the reinforcing member first portion) that has no significant function other than defining a space. The recitation of such an unnecessary structure in the claims invites third parties to simply eliminate the superfluous structure in attempting to avoid the claim language while still fully practicing Appellants’ otherwise patentable invention. All of this occurred through no fault of the Appellants, who were merely following what was then considered to be good and required claiming convention or practice.

## **II. The Prosecution Record Clearly Demonstrates that Appellants Did Not Surrender the Flange 4b; There Can Be No Recapture Where There Is No Surrender of Broadened Subject Matter**

### **A. *Surrender is a Threshold Issue; Where There is No Broadening of Surrendered Subject Matter, There Can Be No Recapture***

There are two levels of inquiry regarding recapture. First, there are some situations in which the recapture doctrine simply does not apply. Second, if the recapture doctrine does apply, there are two kinds of recapture, namely, permissible recapture and impermissible recapture. One point that is absolutely clear as regards the law of reissue recapture is that the doctrine of reissue recapture is completely inapplicable unless the aspect eliminated from the reissue claim constitutes “surrendered” subject matter. Thus,

the issue of whether there has been surrender is a threshold issue to any application of the recapture doctrine.

To determine whether subject matter was surrendered, one looks to the prosecution history for arguments and changes to the claims made in an effort to overcome a prior art rejection. *Clement*, 131 F.3d at 1468. Surrender must be “deliberate.” *Id.*; *Mentor*, 998 F.2d at 995.

CCPA and Federal Circuit case law places great emphasis on the fact that “the recapture rule does not apply in the absence of evidence that the amendment was an admission that the scope of the claim was not patentable [prior to amendment].” *Clement*, 131 F.3d at 1468. Furthermore, in *Hester* the Federal Circuit stated:

“This court’s prior opinions indicated that, as a general proposition, in determining whether there is a surrender, the prosecution history of the original patent should be examined for evidence of an admission by the patent applicant regarding patentability.”  
142 F.3d at 1480.

It may well be the case that, in a situation where only a single feature is added to a claim to overcome a prior art rejection, there is possibly an inference that the claim, without that feature, is conceded as not being allowable. However, in a situation in which several feature (e.g., features A, B and C) are added by amendment, without more, there cannot be said to be any admission that a claim without any one of those features A, B or C is not patentable. In such a case, unless the applicant made specific arguments with respect to one or more of features A, B or C, it could not be determined from the evidence in the prosecution history whether the applicant was “surrendering” a claim scope that did not include any one of those features.

In fact, in every one of the recent cases in which recapture has been found, a finding of “surrender” was based at least in part on arguments made during prosecution of the original patent, and in *Hester* based solely on such arguments.<sup>5</sup> So too, in every one of the Examples contained in the Reissue Guidelines in which impermissible recapture is found, there were arguments made during the original prosecution that formed the basis for the finding of surrender.

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<sup>5</sup> In *Hester* the court stated: “Indeed, in *Mentor* and *Clement* the findings of a surrender were based in part on the arguments made in conjunction with the claim amendments.” 142 F.3d at 1481.

Thus, according to the law, a finding that claim scope has been “surrendered” requires evidence clearly showing that the applicant has made an admission regarding patentability, and this almost always (and especially in the situation where multiple elements have been added by amendment) requires evidence in the form of arguments by the applicant.

**B. *The Threshold Issue of Surrender Focuses On The Subject Matter That Has Been Eliminated From The Claims of the Original Patent***

The case law and common sense both dictate that it is inappropriate to simply measure the difference in scope between the reissue claim and the canceled claim and hold that everything constituting that difference is surrendered subject matter. Instead, the proper analysis of recapture is to look at the subject matter that is being removed from the original patent claim. The removed subject matter is the “trigger” for the recapture determination, i.e., whether the removed subject matter makes the reissue claim of essentially the same or broader scope than the scope surrendered during prosecution.<sup>6</sup>

As a first step, therefore, it must be determined just exactly what is being eliminated from the patent claims. Then, one must look to the basis for the prior art rejection, and then one must look to the prosecution history to determine whether the applicant deliberately surrendered the subject matter represented by the difference in scope, e.g., by seeing whether the applicant specifically argued the allegedly surrendered subject matter and/or the Examiner relied upon such subject matter in allowing the claim. This is precisely the analysis the Federal Circuit undertook in its most recent case, *Pannu*.

**C. *The Only Subject Matter Eliminated From the Reissue Claims Is Flange b, i.e., The Limitation Being Added (Remaining) is Substantially the Same as the Limitation Being Deleted***

The differences in the final limitation (final paragraph) present in the ‘635 patent claim and corresponding portions of reissue claims 113 and 128 are illustrated in the claim chart enclosed as Exhibit C. The color shading shows the similarity between the language used to describe each limitation. The blue shading depicts the language used to

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<sup>6</sup> In *Clement* the Federal Circuit stated: “Reissued claims that are broader than the original patent’s claims in a manner directly pertinent to the subject matter surrendered during prosecution are impermissible,” quoting *Mentor*.

define the order of the elastic plate vis-à-vis the reinforcing member (1). The green shading depicts the language used in defining the clearances (2). The yellow shows the language used to define both the clearances for allowing axial movement (2) and the order of the elastic plate vis-à-vis the reinforcing member (1). From a comparison of these limitations, it is clear that both clauses are claiming essentially the same subject matter, only in a slightly different manner.

The only substantive language that is present in the patent claim and that is not included in reissue claims is shown in red in Exhibit C, namely, the “reinforcing element compris[ing] a first portion . . . defining [a] clearance.” As discussed above, this language was present simply to define the space or clearance behind the flywheel (in an axial direction away from the crankshaft) and adds nothing further to the claim. As is clear from Exhibit C, this space or clearance is still present in the reissue claims (i.e., the green shaded portion “said flywheel body having a first free space on a side opposite of the first clearance”).

In totality, as described above, the structural limitations of the reissue claims are substantially equivalent to the limitations removed from patent claims 1 and 8 in that both limitations describe clearances for allowing movement of the flywheel body and the order of the elastic plate vis-à-vis the reinforcing element. The difference between the old limitation and the new limitation lies mainly in how the space on the side of the flywheel body opposite to the first clearance is defined. Specifically, instead of using structure of the reinforcing element to define another clearance, Appellants have instead directly claimed a first free space for allowing the flywheel body to axially move. However, the effect is still the same, namely, spaces are defined for allowing axial movement of the flywheel body. The originally claimed axial order of the elastic plate vis-à-vis the reinforcing element also continues to be defined in the reissue claims, albeit in different words. Thus, although somewhat different terminology is employed, substantially the same structure is being claimed, structure that allows for axial movement of the flywheel body and defines the axial order. Only flange 4b is eliminated in the reissue claims.

**D. The Prosecution History Makes Clear that Appellants Did Not "Surrender" Flange b**

To determine whether the threshold for recapture has been crossed, it has now to be determined if the prosecution history clearly demonstrates that flange b (that which has been broadened vis-à-vis the original claim) was deliberately surrendered during prosecution of the original patent. Appellants submit, for the reasons explained below, that they did not surrender flange b.

The prosecution history supports Appellants position that the reinforcing member first portion (flange 4b) was added only to (1) define the order of the elastic plate vis-à-vis the reinforcing member; and (2) define the axial movement of the flywheel first portion axially within a clearance or space on one side of the flywheel. The prosecution history shows that Appellants did not surrender a claim scope that does not contain a reinforcing element first portion (flange 4b) as such.

The Rule 196(b) amendment, along with the March 27, 1995 amendment, added the claim elements that are underlined in claim 1 of the '635 patent set forth below. The scope of the claim before amendment is bolded, and the subject matter underlined was added. (The analysis here focuses only on the final subparagraph.)

**1. A flywheel for a power transmission system for transmitting engine torque to a driven unit, comprising:**

**an elastic plate secured to a crankshaft to rotate therewith;**

**a flywheel body secured to said elastic plate and having an engageable surface for engaging with a clutch disc; and**

**a reinforcing member for reinforcing said elastic plate at a portion of said elastic plate which is secured to said crankshaft;**

**said elastic plate having an axial rigidity in the range of 600 kg/mm to 2200 kg/mm so as to ensure transmission of engine torque to said driven unit, while decreasing noise produced by a bending vibration of said crankshaft;**

**wherein each of said elastic plate, said flywheel body and said reinforcing member comprises a first portion, said first portion of said flywheel body being placed axially between said first portions of said elastic plate and said reinforcing member, and said first portions of said elastic plate, said flywheel body and said reinforcing member defining clearances for allowing said first portion of said flywheel body to move axially between**

said first portions of said elastic plate and said reinforcing member.

On page 9 of the Rule 196(b) amendment, applicants argued that:

“flywheel body 9 of Numata ‘542 does not have a first portion “placed axially between” and “axially movable between” first portions of the elastic plate 3 and the plate member 24. Instead, the *plate member 24 of Numata ‘542 is disposed entirely on an opposite side of the elastic plate 3 from the flywheel body.*”

(Emphasis added.) From the above passage, it is clear that Appellants argued only the axial order of the elastic plate vis-à-vis the reinforcing element and the possibility of axial movement of the reinforcing member, in view of Numata ‘542’s order of these elements. There is nothing in the prosecution history that addresses the flange 4b *per se* as important or critical to the invention or the claims in defining over the prior art. As noted above, the specification at column 4, lines 14-17, describes this first portion only as defining a clearance for allowing movement of the flywheel body. Nor is there anything in the prosecution history that indicates that, during examination of the original patent, the Examiner relied upon or considered important for allowance the recitation of the reinforcing member first portion (flange 4b). Indeed, as explained above, the presence of flange 4b in the original claims was for the sole purpose of “defining [a] clearance” or void space to satisfy an antiquated claim drafting convention that prohibited positively claiming a void space or aperture. See Section I(B), *supra*.

Thus, there is no evidence in the prosecution history that would suggest that Appellants deliberately surrendered a claim that did not include the reinforcing element first portion (flange 4b) as a feature of the claim.

In summary, the material features that appellants relied upon to establish the patentability of the original patent claims (i.e., that which was relinquished in the original patent) are still in the reissue application claims, namely, the two clearances for the movement of the flywheel body, and structure for defining axial order of the elastic plate vis-à-vis the reinforcing element. The structural element that has been deleted from the reissue claims, namely, the “first portion of the reinforcing element . . . defining [a] clearance,” was itself clearly not material to allowance of the original patent claims.



Rather, the recitation of this piece of structure in the original patent claims was included as a result of antiquated claiming rules that required it to define the clearance.

It must be concluded, therefore, that the single feature that was been eliminated from the reissue claims (flange 4b) does not relate to surrendered subject matter. For this reason alone, as a threshold matter, there can be no recapture in the present case.

**III Even If The Reissue Claims are Considered, *Arguendo*, to Be Broadened With Respect to “Surrendered” Subject Matter, CCPA and Federal Circuit Precedent Require a Finding of No Impermissible Reissue Recapture.**

**A. *Recapture Is Avoided If the Reissue Claims Are Materially Narrowed In Other Respects***

Appellants have made an incontrovertable showing above that flange 4b was not surrendered during prosecution of the original patent. However, there is no issue, either under the case law or in the Reissue Guidelines, that even if the eliminated claim limitation in a reissue does involve “surrendered” subject matter, impermissible recapture may be avoided if the reissue claims are “materially narrowed in other respects to avoid the recapture rule.” See the third step in *Pannu, supra*, and page 4, last paragraph, of the Reissue Guidelines. Many of the Examples in the Reissue Guidelines are based on this premise (even though the facts in specific instances result in a finding of impermissible recapture).

For the reasons set forth below, even if the very minor canceled limitation in the present case (i.e., flange 4b) is considered, *arguendo*, to broaden the reissue claim “in a manner directly pertinent to” surrendered subject matter (*Pannu*), under CCPA and Federal Circuit precedent, the remaining limitation (added vis-à-vis the canceled claim) is both material and “related” or “germane” to the prior art rejection in the original patent prosecution. Thus, there is no impermissible recapture.

In cases where the reissue claims are as broad as or broader in some aspects and narrower in other aspects than the canceled claim (in the original prosecution), the Federal Circuit has stated: “[r]eissue claims that are broader in certain respects and narrower in others may avoid the effect of the recapture rule. If a reissue claim is broader in a way that does not attempt to reclaim what was surrendered earlier, the recapture rule may not apply.” *Mentor*, 998 F.2d at 996. This fundamental view of the reissue recapture

rule is also confirmed in the Reissue Guidelines (copy enclosed as Exhibit D) at page 4 (“[r]eissue claims that are broader in certain aspects and narrower in others vis-à-vis claims canceled from the original application to obtain a patent may avoid the effect of the recapture rule if the claims are broader in a way that does not attempt to reclaim what was surrendered earlier”). As the Reissue Guidelines also indicate at page 6, each determination of recapture must be made on a case-by-case basis.

The Federal Circuit has stated that, if added limitations “narrow the claims in any *material aspect* compared with their broadening,” then the reissue claim is broader in a way that does not attempt to reclaim what was surrendered earlier, and the recapture rule should not apply. *Mentor*, 998 F.2d at 996.

It is also fundamental that a consideration of the materiality of the added limitation involves evaluation of the scope of the claim as a whole. The Federal Circuit and its predecessor court, the Court of Customs and Patent Appeals, have consistently held that, in recapture situations, “the focus is not [ ] on the specific limitations or on the elements of the claims but, rather, on the scope of the claims.” (emphasis added). *Ball Corporation*, 729 F.2d at 1436. The Federal Circuit has explicitly indicated that it was not adopting the narrower principle applied previously by some circuit courts of appeals and was instead adopting a more liberal approach taken by the Court of Customs and Patent Appeals. *Ball Corp.*, 729 F.2d at 1435 (“[w]e decline to adopt the rigid standard [of focusing solely on the feature or limitation being removed] applied in *Riley*, in favor of the more liberal approach taken by the CCPA”). *Clement*, *Hester* and *Pannu* all focus on the scope of the claim and follow this approach.

Thus, when reviewing the claims under the recapture doctrine, the reissue claim is examined, as a whole, to determine if the narrowing limitation materially narrows the reissue claim vis-à-vis the canceled claim, or if the reissue claim is attempting to reclaim what was surrendered earlier, *i.e.*, a non-material limitation effectively results in a claim that is of the “same scope” as the originally-presented and deliberately canceled claim.

As noted above, the pending reissue claims 113 and 128 are broader in one very narrow aspect in comparison to claims 1 and 8 of the Appellants' U.S. Patent No. 5,465,635, on which this reissue application is based, i.e., the only difference is flange 4b.<sup>7</sup> On the other hand, reissue claims 113 and 128 are neither broader than nor essentially the same scope as the broadest claim canceled during prosecution of the original '635 patent, and in fact, they are significantly narrower than the canceled claims.

The following limitation was added to the claims in the "parent" application Serial No. 08/243,526 to overcome the Examiner's and the Board's earlier prior art rejection based on Numata '542.

--wherein each of said elastic plate, said flywheel body and said reinforcing member comprises a first portion, said first portion of said flywheel body being placed axially between said first portions of said elastic plate and said reinforcing member, and said first portions of said elastic plate, said flywheel body and said reinforcing member defining clearances for allowing said first portion of said flywheel body to move axially between said first portions of said elastic plate and said reinforcing member.--

This entire paragraph was deleted from the pending reissue claims 113 and 128, but these limitations removed from the patent claims were essentially the same limitations added to the reissue claims 113 and 128, i.e., the narrowing limitations set forth in Exhibit C and reproduced below:

--wherein said elastic plate is clamped axially between said reinforcing member and said shaft end of said crankshaft, and  
wherein a first portion of said flywheel moves axially with respect to said reinforcing member and said elastic plate,  
wherein said reinforcing member has a radially extending portion which extends at least inwardly of said flywheel body, and wherein said elastic plate comprises a first portion, said first portion of said flywheel body being placed axially after said first portion of said elastic plate, and said first portions of said flywheel body and said elastic plate defining a first clearance and said flywheel body having a first free space on a side opposite of the first clearance for allowing said first portion of said flywheel body to move axially within the first clearance and the free space.--

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<sup>7</sup> Appellants note that at page 5 of the final Office Action, the PTO remarks that "applicant's comparison of claims 113 and 128 with claims 1 and 8 of Pat. '635 is immaterial since claims 1 and 8 of Pat '635 are allowed claims. The test is not whether the issue [sic] claims are broader in some respect in comparison to the patented claims." However, as set forth in *Pannu*, the first step in recapture analysis is to determine whether and in what aspect the reissue claims are broader than the patent claims. Thus, the comparison to patented claims 1 and 8 is appropriate.

As explained above with reference to Exhibit C, the limitations added to the reissue claim (1) represent the “additions” to the canceled claims and (2) are essentially identical to the limitations removed from the patent claims.

These narrowing limitations in the pending reissue claims have been, and apparently still are, considered by the Examiner to patentably distinguish over Numata ‘542 reference and the other prior art of record.<sup>8</sup> Thus, there is no question that this narrowing limitation has a material aspect to it, and that the limitation is not incidental, mere verbiage, or inherent in the canceled claims. That is, this limitation renders the claim, as a whole, patentable over the prior art. The Appellants are not recapturing the subject matter of a canceled claim, as stated in the Office Action. Instead, the Appellants are presenting the Examiner with a materially narrower claim vis-a-vis the claims canceled or surrendered in the parent and/or grandparent applications. The material narrowness is in fact the very same limitations that were argued as a basis for patentability in the original patent. In this reissue application, the recapture rule does not prohibit such claims that are materially narrower than the canceled claims.

In spite of appellants arguments to the contrary, the PTO apparently continues to take the position that the limitations described above are not material. Page 3 of the final Office Action states “applicant cannot recapture old claim 16 of SN ‘659 by adding the limitation which is unrelated to the rejection based on Numata et al. [i.e., Numata ‘542] as done in lines 13-23 of new claim 113.” Also, in the paragraph bridging pages 5 and 6 of the final Office Action, the PTO states that claims 113 and 128:

add new limitations in the ‘wherein’ clauses. The first ‘wherein’ clause which recites ‘said elastic plate is clamped axially between said reinforcing member and said shaft end of said crankshaft’ is copied from claim 4 of Pat. ‘635.<sup>9</sup> The second ‘wherein’ clause which recites that ‘said first portion of

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<sup>8</sup> As noted above, none of the claims stand rejected based on prior art.

<sup>9</sup> The PTO’s position apparently is that because this was a dependent claim that depended from an allowed claim, it can not be a material limitation. See page 9 of the February 24, 2000 Office Action.

The amendment filed under 37 C.F.R. § 1.196(b) was the first time that a claim identical to claim 4 of the ‘635 patent was presented. This claim was presented as new claim 19. This amendment was submitted after the Board’s decision dated January 5, 1994 affirming the examiner’s rejections.

In the first Office Action of the continuation application (Serial No. 08/243,526) dated after the Board affirmed the Examiner’s rejection, the Examiner noted that misnumbered claims 19-26 were renumbered as claims 20-27 respectively. This means that claim 4 of the ‘635 patent was considered by the examiner to be claim 20 rather than claim 19. The Examiner continued to reject claims 14-16 and 18 as being

said flywheel body and said elastic plate defining a first clearance and said flywheel body having a first free space on a side opposite of the first clearance for allowing said first portion of said flywheel body to move axially within the first clearance and the free space' merely states inherent result [sic] of limitations already recited in the body of the claim, thus, it adds nothing to [the] claim's patentability or substance.<sup>10</sup>

(Emphasis added.)

These statements are obviously inconsistent with the PTO's position taken during prosecution of the original patent and this application, namely, that claims with these limitations are patentably distinct over Numata '542. That is, these limitations are considered by the PTO to define the claims over Numata '542, because without these limitations the claims would be substantially equivalent in scope to the claims rejected in the parent application over Numata '542. Thus, since these limitations are basically identical to the limitations entered into the original claims to gain their allowance, they are clearly material to a prior art rejection (Numata '542) consequently there can be no impermissible recapture.

***B. Even If the Materiality Must Relate to the Limitation Added During Prosecution, There Is No Recapture In This Application***

The materiality aspect of the narrowing limitation was stated somewhat differently in *In re Clement*, 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997). In *Clement*, the Federal Circuit noted that in examining a narrowing limitation, it must be determined if the narrowing limitation is "germane to a prior art rejection," that is, not only whether the narrowing limitation is "material" to patentability but also whether it is germane to the original ground of rejection in the patent.

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unpatentable over Numata in view of Applicants' prior art admissions. The Examiner indicated that the rationale of the Board of Appeal decision was being incorporated by reference.

Significantly, in paragraph 10 on page 4 of the Office Action, the Examiner indicated that claims 11-13 and 20-27 contained allowable subject matter. Claim 20 depended on allowed claim 11, and therefore, the PTO never directly opined, one way or the other, whether claim 20 contained subject matter that was independently allowable from claim 11. Thus, the PTO is in error to take the position that the record allegedly demonstrates that this limitation was immaterial.

<sup>10</sup> Appellants note the PTO's ever evolving reasons for holding that the limitation in the second "wherein" clause is "incidental" or "inherent." See, e.g., page 8 of the February 24, 2000 Office Action where the PTO takes the position that the limitation is "incidental" or "inherent" because it was "vague and indefinite."

The Office Action states that the narrowing limitation added to claim 16 “is narrower in another aspect unrelated to the prior art rejection based on Numata et al.” Appellants respectfully disagree. The narrowing limitation added to claim 16 is indeed directly related to the prior art rejection based on Numata ‘542, and in fact, the limitation being removed from the patent claim and the limitation being added vis-à-vis the canceled claim are related to each other. As explained above, they are essentially the same subject matter, the only difference being the absence of any reference to flange 4b. Specifically, the limitation being removed from claims 1 and 8 defines an interrelationship of the elastic plate vis-à-vis the reinforcing member, and axial movement of the flywheel body relative to the reinforcing member and elastic plate. Likewise, the narrowing limitation being added vis-à-vis the canceled claim recites an interrelationship between the elastic plate vis-à-vis the reinforcing member, and axial movement of the flywheel body relative to the reinforcing member and elastic plate within free spaces.<sup>11</sup> Thus, this is not a case like *Clement*, where the limitations removed in the reissue claims were directed to temperature, mechanical energy and pH limitations, whereas the added limitations were directed to final pulp brightness. Instead, as noted above, the limitations being added vis-à-vis the canceled claim are structurally related and are substantially identical to the limitations being removed from patent claims 1 and 8. That is, in the words used by the Federal Circuit in *In re Clement*, the narrowing limitation is certainly “germane to a prior art rejection” in that both the narrowing limitation and the removed limitation are structurally related and both overcome the very same prior art rejection being based on Numata ‘542, by referring to essentially the same relationship(s) between the same essential elements of the invention. 131 F.3d at 1469.

Therefore, applying the test of *Clement*, and the presumably same test applied in the Examples of the Reissue Guidelines to the facts of the present case, leads to the inescapable conclusion that the requirements of that test are satisfied, such that there is no impermissible recapture in the present case.

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<sup>11</sup> As set forth above, appellants submit that these claim limitations are essentially identical. *A fortiori*, the claim limitations are indeed related to each other.

**C. The Facts of the Present Case Are “On All Fours” With Those of *In re Richman***

Reversal of the present rejection is also strongly mandated by the basic principle of stare decisis. The facts of the present case fall into a category for which ample precedent exists holding that there is no impermissible recapture. Simply stated, the case law has consistently permitted a reissue applicant to remove part of a limitation added by amendment during prosecution of the original patent, where the partial limitation removed was clearly not necessary to establish patentability. Such a situation also fits neatly into the needlessly complex and confusing tests enumerated by the Federal Circuit in recent years, i.e., the remaining part of the amendment to the original patent claims renders the reissue claim narrower than the canceled (amended) claim, in an aspect that is clearly germane to the original rejection (in response to which the original amendment was made), and it can not be presumed that the applicant intended to “surrender” a claim scope that did not include the now-deleted (and not-relied-upon) part of the original claim limitation.

In the case of *In re Richman*, 409 F.2d 269, 161 USPQ 359 (CCPA 1969), the CCPA stated:

“We therefore find neither decision to be authority for the proposition that a limitation added to a claim in obtaining its allowance cannot be broadened, under present statutory law, by reissue if the limitation turns out to be more restrictive than the prior art required. Certainly one might err without deceptive intention in adding a particular limitation where a less specific limitation regarding the same feature . . . would have been sufficient to render the claims patentable over the prior art.”

409 F.2d at 274-5. *Richman* was decided by the full five-member bench of the CCPA and, by law, is binding precedent on the Federal Circuit. Only an *en banc* panel of the Federal Circuit can overrule a CCPA case (not merely a three-judge panel), and *Richman* has not been so overruled or modified. (In fact, *Richman* is cited with approval in *Clement*.)

In *Richman*, the limitation at issue was a “control signal” in a television which provided “color killing” and “mode synchronization.” *Id.* at 275. In canceled claims 1-15, the control signal was claimed as a “unidirectional control signal representative of the phase relation of ... [the] generated signal and ... [the] synchronizing signal.” *Id.* The control signal in the original patent claims specified the polarity of the

magnitude of the control signal, which the Patent Office found during examination of the reissue to be narrower than the control signal limitation in the originally canceled claims. *Id.* at 274. The control signal in the reissue claims did not specify polarity, but was required to have “one value when the reference generator output is in synchronism with the synchronizing signal at the desired phase relation and ‘another value’ both when the synchronizing signal is absent and when it is present but out of synchronism with the reference generator oscillations.” *Id.* at 275. The Patent Office found this limitation of control signal to be of the same scope as that of the canceled claims and implicitly to be broader than the recitation of the control signal in the patented claim. *Id.* at 274. Since the patentee had included the polarity of the control signal in the original patent claims in order to obtain a patent, the Patent Office argued that the patentee should not be allowed to alter or omit this polarity limitation for the control signal in the reissue claims. *Id.*

The CCPA disagreed and noted that the Patent Office was impermissibly focusing on the specific limitation added during prosecution rather than on whether the reissue claims are of the same scope as the canceled claims so as to recapture canceled subject matter. Specifically, the court stated that “[t]he question raised is whether the appealed claims are of the same scope as the canceled claims, not whether they lack some specific recitation absent from the cancelled claims but included in the patent claims.” *Id.* The court went on and found that the control signal limitation was narrower in the reissue claim than the original application claims, and thus the reissue claims were not attempting to recapture canceled subject matter. *Id.* at 276. Thus, although the patentee was broadening the control signal limitation, vis-à-vis the original patent claim (the same limitation which had been narrowed in order to obtain a patent), the court found no impermissible recapture as long as the claims were narrower in at least one significant respect vis-a-vis the canceled claims, i.e., based on the remaining part of the control signal limitation. *Id.* at 276.

In the present case, the limitations at issue involve the interrelationship of the elastic plate vis-à-vis the reinforcing member and the axial movement of the flywheel body relative to the reinforcing member and elastic plate. This interrelationship is analogous to the “control signal” in *Richman*. In the present case, this relationship was added to obtain allowance of the claims. In *Richman*, the control signal limitation was narrowed to obtain



allowance. In the present case, the interrelationship is still claimed in the reissue claims but in a way that, at most, is only very slightly broader than the relationship allowed in the patent claims. In *Richman*, the control signal limitation claimed in the reissue claims was broader than the control signal limitation allowed in the patent claims. In spite of the fact that the control signal limitation in the reissue claims was broader than the control signal limitation in the original patent and had been relied upon to obtain allowance of the claims, no recapture was found. The CCPA found that the control signal limitation was materially narrower in the reissue claims than the control signal in the canceled application claims, by virtue of the portion of the control signal limitation remaining after elimination of the broadening aspect of that limitation from the reissue claims.

Since the facts of the present case are essentially parallel to those in *Richman* (or, actually, are somewhat more favorable in that only a very slight aspect of the original limitation is being removed), no recapture is present based on the precedent of *Richman*. As stated above, *Richman* remains binding precedent on the Federal Circuit (and, hence, on the PTO), until overruled by an *en banc* panel, which has not taken place. Appellants submit that the PTO cannot maintain the present rejection based on recapture without acting contrary to the binding precedent provided by the *Richman* case.

Moreover, as in *Richman*, the narrowing limitation in the present case is directly related to the original prior art rejection because the limitation makes the claims patentable over the Numata '542 reference, and accordingly, is both "material" and "germane to a prior art rejection." Although the narrowing limitation (vis-à-vis the canceled claims) added to the reissue claims 113 and 128 is different in scope from the corresponding limitation found in the patent claims 1 and 8, the limitations are nevertheless similar in that they both distinguish over Numata '542 by reciting a different arrangement of the elastic plate relative to the reinforcing member. A limitation added to a claim to obtain its allowance can be broadened by reissue "if the limitation turns out to be more restrictive than the prior art required." *Richman*, 409 F.2d at 274-275, 161 USPQ 359 (CCPA 1969).

Moreover, the circumstances or reasons giving rise to the inclusion into a claim of unnecessary recitations of structure in the present claims are much more compelling of "error" than those apparently present in *Richman*. In the present case, the

unnecessary structure was not introduced to differentiate over the prior art but was due to following outdated claim drafting “principles.” This is clearly the type of “error” that is correctable by reissue.

***D. A Finding of No Recapture In This Case Is Consistent with the Totality of Federal Circuit and CCPA Precedent***

Lest the Board believe for whatever reason that a finding of impermissible recapture is mandated by other recent Federal Circuit cases, Appellants will briefly point out in this final section why this is not true.

The facts in the present case are also fully consistent with those in the *Mentor* case, *supra*. *Mentor* differs factually in one critical aspect. In *Mentor*, the narrowing limitation was held to “not materially narrow the [canceled] claim.” *Mentor*, 998 F.2d at 996-97. In the present case, the narrowing limitations in claims 113 and 128 have been found to be material, since they are essentially the same as the limitation added to gain allowance of the original patent, and they render claims 113 and 128 patentable over Numata ‘542, i.e., the prior art reference over which the claims were originally rejected.

The present case is also similar to other prior court cases in which no violation of the recapture rule was found. For example, in *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 294-95 (Fed. Cir. 1984), the reissue claim, although broadened by elimination of a portion of a limitation added by amendment to gain allowance of the original patent, was narrower than the canceled claims in an aspect relating to a prior art rejection and broader in an aspect unrelated to the rejection. The court allowed the reissue claim because the patentee was not attempting to recapture surrendered subject matter. *Id.*

In *Whittaker Corp. v. UNR Industries, Inc.*, 911 F.2d 709, 15 USPQ2d 1742 (Fed. Cir. 1990), the court held that a claim added to a patent during reissue was not invalid under the recapture rule when it contains a limitation making it narrower in scope than a similar claim that was canceled during the original prosecution. Similarly, the Appellants in the present case are presenting claims in this reissue application that are materially narrower in scope than the surrendered claims 16 and 18 in the grandparent

application. Thus, the Appellants are not trying to recapture the same claims that were canceled or surrendered during the original prosecution.

The present case is also materially different from the facts of the prior court cases cited by the PTO in support of the recapture rule. For example, the reissue claims in *Clement* were materially broader, and only incidentally narrower, than the claims surrendered during the prosecution. 131 F.3d at 1471, 45 USPQ2d at 1165. The reissue claims in *Clement* were broadened by removing limitations that directly related to several prior art rejections made during the prosecution. *Id.* *Clement*, however, did not add any narrowing limitations having a material aspect that would avoid the prior art rejections and that had not been considered before. The only narrowing limitation in the reissue claim of *Clement* was a limitation that had previously been added in another claim in an effort to overcome a prior art rejection. *Id.* This is much different from the present case where the reissue claims have materially narrowing limitations that (1) are related to the limitation removed (actually, almost identical), (2) are not found in any of the surrendered or canceled claims in the parent and/or grandparent applications, and (3) relate to the previous prior art rejection and patentably distinguish over the Numata '542 reference that was the basis for the rejection in the original patent.

As noted above, the court in *Clement* announced “principles” for reissue claims, which included claims as broad as or broader in some aspects and narrower in other aspects, i.e., vis-à-vis the canceled claims. *Id.* at 1469. Specifically, according to the principles: “(a) if the reissue claim is as broad as or broader in an aspect germane to a prior art rejection, but narrower in another aspect completely unrelated to the rejection, the recapture rule bars the claim; or (b) if the reissue claim is narrower in an aspect germane to prior art rejection, and broader in an aspect unrelated to the rejection, the recapture rule does not bar the claim.” *Id.* In the facts of the present case, part (a) does not apply, because the broadened subject matter (flange 4b) is not an aspect germane to patentability, and the reissue claim is not narrower than the canceled claim in an aspect unrelated to patentability. Instead, the present reissue claims are narrower in an aspect intimately related to patentability and, in fact, to the prior art rejection in the parent cases. Part (b) is applicable in principle, because the reissue claim is narrower in a substantial aspect that is germane to patentability (although the latter aspect of (b) is not present in the instant case).

Thus, the “principles” enunciated in *Clement* are entirely consistent with Appellants’ contention based on the present facts.

The present case is also different from *Hester Industries, Inc. v. Stein, Inc.*, 142 F.3d 1472 (Fed. Cir. 1998), in that there has been no showing that any arguments made during the prosecution of the parent and/or grandparent applications were sufficient to trigger the recapture rule. In *Hester*, the court held that surrender of claimed subject matter can occur through arguments alone. 142 F.3d at 1480, 46 USPQ2d at 1648. This holding is not relevant to the present case where the broadened subject matter vis-à-vis the original patent claims is found only in the claim amendments in the grandparent application, and not in any of the Appellants’ arguments during prosecution of the original patent, i.e., Appellants never argued flange 4b *per se* as a basis for patentability.

The present case is also significantly different than the recently decided case of *Pannu v. Storz Instruments, Inc.*, 258 F.3d 1366, 59 USPQ2d 1366 (Fed. Cir. 2001). In *Pannu*, the limitation being removed in the reissue claim was a “continuous, substantially circular arc” that related to the structural details of the haptics of the claimed intraocular lens. This limitation was added by amendment during prosecution to obtain allowance of the claims. 59 USPQ2d at 1599. Another limitation that was added during reissue was not directed to the haptics; instead, the limitation recited further dimensions and positioning of the “snag resistant means.” *Id.* at 1600. The *Pannu* court found that the reissue claims were not narrowed in any material respect when compared with their broadening, because the added elements were not related to the shape of the haptics. *Id.* at 1600-01. In the present case, the limitations being added in the reissue claims (vis-à-vis the canceled claims) are directly related to the limitation added during prosecution, in that both are related to the interrelationship of the elastic plate vis-à-vis the reinforcing member and the axial movement of the flywheel body. In fact, as noted above, the added limitations are essentially identical to the deleted limitations. Thus, under *Pannu*, there is no impermissible recapture in the present case.

Finally, none of the Examples provided in the Reissue Guidelines is applicable to the present facts, and none conflicts with Appellants’ position that the present claims are not impermissibly recapturing canceled subject matter. In fact, the Reissue Guidelines state at page 6 that “each recapture issue should be decided on a case-by-case

basis.” Although not expressly dealing with a comparable fact situation, the Guidelines and all the Examples therein are predicated on the premise that a narrowing limitation which directly relates to the original rejection is sufficient to avoid recapture, e.g., see Example 4(b). As described above, the narrowing limitations added to reissue claims 113 and 128 do, in fact, relate to the prior art rejection based on Numata ‘542, in that the limitations originally added to overcome the rejection based on Numata ‘542 and the present narrowing limitations are essentially identical and both relate to the interrelationship between the elastic plate, the flywheel body and the reinforcing member and the axial movement of the flywheel body relative to the reinforcing member and elastic plate. Thus, since the present (material) narrowing limitations do relate to the prior art rejection based on Numata ‘542, a finding of no impermissible recapture is also entirely consistent with and is mandated by the narrowest possible interpretation that can be ascribed to the Reissue Guidelines.

#### **IV. Conclusions**

Appellants are relying on express precedent from the Court of Appeals for the Federal Circuit and its predecessor court, the CCPA. The cases cited in the Office Action do not (and, in fact, cannot) overrule the prior cases on which Appellants rely and in any event are not inconsistent with the cases on which Appellants rely. For the reasons explained in detail above, the cases cited in the Office Action do not contain fact situations similar to the present facts, nor do these cases express rules that either contradict the earlier case law or require a finding of impermissible reissue recapture in the present case.

Appellants contend that a proper application of the case law and of the Reissue Guidelines must lead to the following findings/conclusions:

1. Appellants never “surrendered” flange 4b.
2. Since there is no “surrender” of the only broadened subject matter, the threshold condition for application of the recapture rule is not satisfied.
3. Even if flange 4b were to be considered, arguendo, as constituting “surrendered” subject matter, no impermissible recapture can be found here because a comparison of the reissue claims with the canceled claims demonstrates that virtually all of the original amendment survives in the reissue claims, i.e., they are materially

narrower than the canceled claims in a manner directly germane to the original rejection because the reissue claims contain the very limitations that were relied upon by the PTO when allowing the original patent.

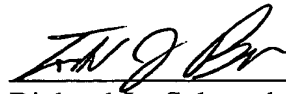
Based on these findings, the conclusion must be reached that the reissue recapture doctrine does not prohibit, on the facts of this case, the elimination of a small portion of a claim limitation added during prosecution, where that small portion was not highlighted in the specification as being important was not argued by Appellants and was not relied upon by the PTO as a basis for patentability, and where the major portion of the claim limitation added during original prosecution remains in the reissue claims and substantially claims the same structure and structural relationship as the original patent claims, including the essential features on which patentability was based.

Accordingly, Appellants respectfully solicit the Honorable Board of Patent Appeals and Interferences to reverse the rejection of the pending claims and pass this application on to allowance.

Respectfully submitted,

March 29, 2002

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## APPENDIX

101. A flywheel assembly for a power transmission system for transmitting engine torque, comprising:

an elastic plate secured to a crankshaft to rotate therewith;

a flywheel body secured to said elastic plate and having an engaging surface for engaging with a clutch disc; and

a reinforcing member for reinforcing said elastic plate at a portion of said elastic plate which is secured to said crankshaft;

said elastic plate having an axial rigidity in the range of 600 kg/mm to 2200 kg/mm so as to ensure transmission of engine torque through said flywheel assembly while decreasing noise produced by a bending vibration of said crankshaft;

wherein each of said elastic plate, said flywheel body and said reinforcing member comprises a first portion, said first portion of said flywheel body being placed axially between said first portions of said elastic plate and said reinforcing member, and said first portions of said elastic plate, said flywheel body and said reinforcing member defining clearances for allowing said first portion of said flywheel body to move axially between said first portions of said elastic plate and said reinforcing member.

102. A flywheel assembly as set forth in claim 101, wherein said axial rigidity is in the range of 600 kg/mm to 1700 kg/mm.

103. A flywheel assembly as set forth in claim 102, wherein an axial run-out of said engaging surface when rotated by said crankshaft is no more than 0.1 mm.

104. A flywheel assembly according to claim 101, wherein said reinforcing member (4) and said elastic plate (2) are fastened to said crankshaft (1) by a fastening means (3), and said elastic plate is clamped between said crankshaft and said reinforcing member.

105. A flywheel assembly according to claim 104, wherein said elastic plate is circular and comprises an outer peripheral portion (2b) surrounding said first portion of said elastic plate, so that said first portion of said elastic plate is an inner portion of said elastic plate, said flywheel body comprises an outer peripheral portion (5a) which surrounds said first portion of said flywheel body, so that said first portion of said flywheel body is an inner portion of said flywheel body, said outer peripheral portions of said elastic plate and said flywheel body are fastened together by a second fastening means (6), said inner portion of said flywheel body comprises an inwardly facing inside cylindrical surface defining a central circular hole (5b), said reinforcing member comprises a cylindrical portion (4a) which is received in said circular hole (5b) of said flywheel body, and comprises an outwardly facing outside cylindrical surface surrounded by said inwardly facing cylindrical surface of said flywheel body, said first portion of said reinforcing member is in the form of an outward flange (4b), said first portion of said flywheel body is mounted on said cylindrical portion of said reinforcing member, and said cylindrical portion of said reinforcing member is sized to allow said first portion of said flywheel body to slide axially between said inner portion of said elastic plate and said outward flange of said reinforcing member.

106. A flywheel assembly according to claim 104, wherein said inner portion of said flywheel body comprises a first surface (5f) which is substantially parallel to said engaging surface (5g) and which faces toward said elastic plate, and a second surface (5d) which is substantially parallel to said engaging surface and which faces toward said



outward flange of said reinforcing member, said inner portion of said elastic plate comprising an abutting surface confronting said first surface of said flywheel body and limiting an axial movement of said inner portion of said flywheel body by abutting against said first surface of said flywheel body, said outward flange of said reinforcing member comprises an abutting surface confronting said second surface of said flywheel body and limiting the axial movement of said inner portion of said flywheel body by abutting against said second surface of said flywheel body, an axial distance between said first and second surfaces of said flywheel body is smaller than an axial distance between said abutting surfaces of said elastic member and said reinforcing member.

107. A flywheel assembly according to claim 106, wherein said second surface (5d) of said inner portion of said flywheel body is located axially between said first surface (5f) and said engaging surface (5g) of said flywheel body.

108. A flywheel assembly for a power transmission system for transmitting engine torque, comprising:

an elastic plate secured to a crankshaft to rotate therewith;

a flywheel body secured to said elastic plate and having an engaging surface for engaging with a clutch disc; and

a reinforcing member for reinforcing said elastic plate at a portion of said elastic plate which is secured to said crankshaft; and

said engaging surface having an axial run-out which is equal to or less than 0.1 mm;

wherein each of said elastic plate, said flywheel body and said reinforcing member comprises a first portion, said first portion of said flywheel body being

placed axially between said first portions of said elastic plate and said reinforcing member, and said first portions of said elastic plate, said flywheel body and said reinforcing member defining clearances for allowing said first portion of said flywheel body to move axially between said first portions of said elastic plate and said reinforcing member.

109. A flywheel assembly comprising:

a crankshaft (1) for transmitting torque;

a circular elastic plate (2) comprising an outer portion and an inner portion and extending radially inwardly from said outer portion to said inner portion, said inner portion of said elastic plate being fastened to a shaft end of said crankshaft;

an annular flywheel body (5) comprising an outer portion and an inner portion and extending radially inwardly from said outer portion to said inner portion of said flywheel body, said outer portion of said flywheel body being fastened to said outer portion of said elastic plate, said inner portion of said flywheel body comprising a central circular hole; and

a reinforcing member (4) comprising a cylindrical portion (4a) axially extending from a first member end to a second member end, an inner portion extending radially inwardly from said first member end of said cylindrical portion, and an outward flange (4b) extending radially outwardly from said second member end of said cylindrical portion, said inner portion of said reinforcing member being fastened to said shaft end of said crankshaft, said cylindrical portion of said reinforcing member being fit in said circular hole of said flywheel body with a clearance to form a loose fit;

wherein said inner portion of said elastic plate is fixedly clamped between said shaft end of said crankshaft and said inner portion of said reinforcing member, said inner portion of said flywheel body is fit over said cylindrical portion of said reinforcing

member and located axially between said inner portion of said elastic plate and said outward flange of said reinforcing member, said outward flange is axially spaced from said inner portion of said elastic plate at an axial distance which allows axial movement of said inner portion of said flywheel body between said inner portion of said elastic plate and said outward flange of said reinforcing member.

110. A flywheel assembly according to claim 109, wherein said elastic plate has an axial rigidity which is in the range of 600 kg/mm to 2200 kg/mm.

111. A flywheel assembly according to claim 109, wherein a wall thickness of said inner portion of said reinforcing member is greater than a wall thickness of each of said outward flange of said reinforcing member and said inner portion of said elastic plate said wall thickness of each of said inner portion and said outward flange of said reinforcing member and said inner portion of said elastic plate being a dimension measured in an axial direction parallel to an axis of said crankshaft.

112. A flywheel assembly according to claim 109, further comprising a first fastening means for fastening said outer portions of said elastic plate and said flywheel body together, and a second fastening means for fastening said inner portions of said elastic plate and said reinforcing member to said shaft end of said crankshaft, each of said first and second fastening means comprises screw fasteners extending axially along an axis of said crankshaft.

113. A flywheel assembly for a power transmission system for transmitting engine torque comprising:

a crankshaft;

an elastic plate comprising an inner portion secured to a shaft end of said crankshaft;

a flywheel body secured to said elastic plate and having an engaging surface for engaging with the clutch disc; and

a reinforcing member for reinforcing said elastic plate at said inner portion of said elastic plate;

wherein said elastic plate has an axial rigidity in the range of 600 kg/mm to 2200 kg/mm so as to ensure transmission of engine torque through said flywheel assembly, while decreasing noise produced by a bending vibration of said crankshaft;

wherein said elastic plate is clamped axially between said reinforcing member and said shaft end of said crankshaft, and

wherein a first portion of said flywheel moves axially with respect to said reinforcing member and said elastic plate,

wherein said reinforcing member has a radially extending portion which extends at least inwardly of said flywheel body, and wherein said elastic plate comprises a first portion, said first portion of said flywheel body being placed axially after said first portion of said elastic plate, and said first portions of said flywheel body and said elastic plate defining a first clearance and said flywheel body having a first free space on a side opposite of the first clearance for allowing said first portion of said flywheel body to move axially within the first clearance and the free space.

114. A flywheel assembly as set forth in Claim 113, wherein said flywheel body comprises an inner portion defining a circular central hole, and an outer portion surrounding said inner portion of said flywheel body; said elastic plate comprises an outer portion which surrounds said inner portion of said elastic plate and which is fixed to said

outer portion of said flywheel body; said reinforcing member is fit in said central hole of said flywheel body with a clearance to form a loose fit; and said reinforcing member comprises an outer circumferential surface for allowing said inner portion of said flywheel body to move axially to said elastic plate without limiting an axial movement of the inner portion of said flywheel body toward said elastic plate.

115. A flywheel assembly as set forth in Claim 114, wherein said reinforcing member extends axially from a first member end defined by a radially extending abutment surface held in contact with said elastic plate, to a second member end; said outer circumferential surface of said reinforcing member extends from said abutment surface toward said second member end of said reinforcing member; said outer circumferential surface of said reinforcing member comprises an outer cylindrical surface section fit in said central hole of said flywheel body, and an outer curved surface section which extends continuously from said outer cylindrical surface section to said abutment surface; and said curved surface section is a surface of revolution whose diameter decreases continuously from a diameter of said cylindrical surface section toward said abutment surface.

116. A flywheel assembly as set forth in Claim 115, wherein said flywheel body comprises a side surface facing toward said elastic plate, and said engaging surface which faces away from said elastic plate and which extends in an imaginary flat plane; and said second member end of said reinforcing member is located axially between said engaging surface and said side surface of said flywheel body and away from said imaginary flat plane.

117. A flywheel assembly as set forth in Claim 113, wherein said flywheel body comprises an inner portion defining a circular central hole, and an outer portion

surrounding said inner portion of said flywheel body; said elastic plate comprises an outer portion which surrounds said inner portion of said elastic plate and which is fixed to said outer portion of said flywheel body; and said reinforcing member comprises an outer circumferential surface allowing said inner portion of said flywheel body to move axially toward said elastic plate without limiting an axial movement of the inner portion of said flywheel body toward said elastic plate.

118. A flywheel assembly as set forth in Claim 113, wherein said flywheel body comprises a side surface facing toward said elastic plate, and said engaging surface which faces away from said elastic plate; and said reinforcing member comprises a radially extending abutment surface held in contact with said elastic plate, and an outer circumferential curved surface which extends continuously from said abutment surface to a curved surface end which is located axially between said side surface of said flywheel body and said engaging surface of said flywheel body.

119. A flywheel assembly as set forth in Claim 118, wherein said outer circumferential curved surface of said reinforcing member is a surface of revolution whose diameter increases continuously from said abutment surface of said reinforcing member to said curved surface end of said outer circumferential curved surface.

120. A flywheel assembly as set forth in Claim 118, wherein said reinforcing member extends axially from a first member end defined by said abutment surface to a second member end which is located axially between said engaging surface and said side surface of said flywheel body; and an axial distance of said second member end of said reinforcing member from said abutment surface of said reinforcing member is smaller

than an axial distance of said engaging surface of said flywheel body from said abutment surface of said reinforcing member.

121. A flywheel assembly as set forth in Claim 118, wherein said engaging surface of said flywheel body extends in an imaginary flat plane; and said reinforcing member extends axially from a first member end defined by said abutment surface to a second member end which is located axially between said engaging surface and said side surface of said flywheel body and which is away from said imaginary flat plane.

122. A flywheel assembly as set forth in Claim 118, wherein said flywheel body comprises an inner portion defining a circular central hole, and an outer portion surrounding said inner portion of said flywheel body; said elastic plate comprises an outer portion which surrounds said inner portion of said elastic plate and which is fixed to said outer portion of said flywheel body; said reinforcing member comprises a received portion which is received in said central hole of said flywheel body; and said outer curved surface of said reinforcing member extends continuously from said abutment surface to said received portion.

123. A flywheel assembly as set forth in Claim 122, wherein said received portion of said reinforcing member comprises a cylindrical outside surface received in said central hole of said flywheel body, and the diameter of said curved surface increases continuously from said abutment surface to a diameter of said cylindrical surface of said reinforcing member.

124. A flywheel assembly as set forth in Claim 121, wherein said axial rigidity is in the range of 600 kg/mm to 1700 kg/mm.

125. A flywheel assembly as set forth in Claim 121, wherein an axial run-out of said engaging surface when rotated by said crankshaft is no more than 0.1 mm.

126. A flywheel assembly as set forth in Claim 125, wherein said engaging surface of said flywheel body is formed so as to make the axial run-out no more than 0.1 mm by processing said engaging surface of said flywheel body in an assembled state in which said crankshaft, said elastic plate, said flywheel body and said reinforcing member are assembled in a unit.

127. A flywheel assembly as set forth in Claim 121, wherein said side surface of said flywheel body comprises an outer side surface section which faces toward said elastic plate and which is fastened to an outer portion of said elastic plate and an inner side surface section which faces toward said elastic plate, which is surrounded by said outer side surface section of said flywheel body, and which is raised from said outer side surface section axially toward said elastic plate.

128. A flywheel assembly of a power transmission system for transmitting engine torque, said flywheel assembly comprising:

a crankshaft;

an elastic plate comprising an inner portion secured to a shaft end of said crankshaft;



a flywheel body secured to said elastic plate and having an engaging surface for engaging with the clutch disc; and

a reinforcing member for reinforcing said elastic plate at said inner portion of said elastic plate;

wherein said engaging surface has an axial run-out which is no more than 0.1 mm;

wherein said elastic plate is clamped axially between said reinforcing member and said shaft end of said crankshaft, and

wherein a first portion of said flywheel moves axially with respect to said reinforcing member and said elastic plate,

wherein said reinforcing member has a radially extending portion which extends at least inwardly of said flywheel body, and wherein said elastic plate comprises a first portion, said first portion of said flywheel body being placed axially after said first portion of said elastic plate, and said first portions of said flywheel body and said elastic plate defining a first clearance, and said flywheel body having a first free space on a side opposite of the flywheel facing the elastic plate for allowing said first portion of said flywheel body to move axially within the first clearance and the free space.

129. A flywheel assembly as claimed in Claim 128, wherein said flywheel body comprises an inner portion defining a circular central hole, and an outer portion surrounding said inner portion of said flywheel body; said elastic plate comprises an outer portion which surrounds said inner portion of said elastic plate and which is fixed to said outer portion of said flywheel body; said reinforcing member is fit in said central hole of said flywheel body with a clearance to form a loose fit; and said reinforcing member comprises an outer circumferential surface for allowing said inner portion of said flywheel body to move

axially to said elastic plate without limiting an axial movement of the inner portion of said flywheel body toward said elastic plate.

130. A flywheel assembly as set forth in Claim 129, wherein said reinforcing member extends axially from a first member end defined by a radially extending abutment surface held in contact with said elastic plate, to a second member end; said outer circumferential surface of said reinforcing member extends continuously from said abutment surface toward said second member end of said reinforcing member; said outer circumferential surface of said reinforcing member comprises an outer cylindrical surface section fit in said central hole of said flywheel body, and an outer curved surface section which extends continuously from said outer cylindrical surface section to said abutment surface; and said curved surface section is a surface of revolution whose diameter decreases from a diameter of said cylindrical surface section toward said abutment surface.

131. A flywheel assembly as set forth in Claim 130, wherein said flywheel body comprises a side surface facing toward said elastic plate, and said engaging surface which faces away from said elastic plate and which extends in an imaginary flat plane; and said second member end of said reinforcing member is located axially between said engaging surface and said side surface of said flywheel body and away from said imaginary flat plane.

132. A flywheel assembly as set forth in Claim 128, wherein said flywheel body comprises an inner portion defining a circular central hole, and an outer portion surrounding said inner portion of said flywheel body; said elastic plate comprises an outer portion which surrounds said inner portion of said elastic plate and which is fixed to said outer portion of said flywheel body; and said reinforcing member comprises an outer

circumferential surface allowing said inner portion of said flywheel body to move axially toward said elastic plate without limiting an axial movement of the inner portion of said flywheel body toward said elastic plate.

133. A flywheel assembly as set forth in Claim 128, wherein said flywheel body comprises a side surface facing toward said elastic plate, and said engaging surface which faces away from said elastic plate; and said reinforcing member comprises a radially extending abutment surface held in contact with said elastic plate, and an outer circumferential curved surface which extends continuously from said abutment surface to a curved surface end which is located axially between said side surface of said flywheel body and said engaging surface of said flywheel body.

134. A flywheel assembly as set forth in Claim 133, wherein said outer circumferential curved surface of said reinforcing member is a surface of revolution whose diameter increases from said abutment surface of said reinforcing member to said curved surface end of said outer circumferential curved surface.

135. A flywheel assembly as set forth in Claim 133, wherein said reinforcing member extends axially from a first member end defined by said abutment surface to a second member end which is located axially between said engaging surface and said side surface of said flywheel body; and an axial distance of said second member end of said reinforcing member from said abutment surface of said reinforcing member is smaller than an axial distance of said engagement surface of said flywheel body from said abutment surface of said reinforcing member.

136. A flywheel assembly as set forth in Claim 133, wherein said engaging surface of said flywheel body extends in an imaginary flat plane; and said reinforcing member extends axially from a first member end defined by said abutment surface to a second member end which is located axially between said engaging surface and said side surface of said flywheel body and which is away from said imaginary flat plane.

137. A flywheel assembly as set forth in Claim 136, wherein said flywheel body comprises an inner portion defining a circular central hole, and an outer portion surrounding said inner portion of said flywheel body; said elastic plate comprises an outer portion which surrounds said inner portion of said elastic plate and which is fixed to said outer portion of said flywheel body; said reinforcing member comprises a received portion which is received in said central hole of said flywheel body; and said outer curved surface of said reinforcing member extends continuously from said abutment surface to said received portion.

138. A flywheel assembly as set forth in Claim 137, wherein said received portion of said reinforcing member comprises a cylindrical outside surface received in said central hole of said flywheel body, and the diameter of said curved surface increases continuously from said abutment surface to a diameter of said cylindrical surface of said reinforcing member.

139. A flywheel assembly as set forth in Claim 136, wherein said engaging surface of said flywheel body is formed so as to make the axial run-out no more than 0.1 mm by processing said engaging surface of said flywheel body in an assembled state in which

said crankshaft, said elastic plate, said flywheel body and said reinforcing member are assembled in a unit.

140. A flywheel assembly according to claim 113, wherein said first portions of said flywheel body and said elastic plate define a space consisting essentially of said first clearance.

141. A flywheel assembly according to claim 113, wherein said first portion of said flywheel body slidably contacts an axial surface of said radially extending portion of said reinforcing member.

142. A flywheel assembly according to claim 113, wherein said flywheel body axially moves corresponding to said axial rigidity of said elastic plate in the range of 600 kg/mm to 2200 kg/mm without contact on its radial surfaces when said flywheel is engaged and disengaged.

143. A flywheel assembly according to claim 128, wherein said first portions of said flywheel body and said elastic plate define a space consisting essentially of said first clearance.

144. A flywheel assembly according to claim 128, wherein said first portion of said flywheel body slidably contacts an axial surface of said radially extending portion of said reinforcing member.

145. A flywheel assembly according to claim 128, wherein said elastic plate has an axial rigidity in the range of 600 kg/mm to 2200 kg/mm so as to ensure transmission of engine torque through said flywheel assembly, while decreasing noise produced by a bending vibration of said crankshaft; and wherein said flywheel body axially moves corresponding to said axial rigidity of said elastic plate in the range of 600 kg/mm to 2200 kg/mm without contact on its radial surfaces when said flywheel is engaged and disengaged.

146. A flywheel assembly as set forth in claim 113, wherein said axial rigidity is in the range of 600 kg/mm to 1700 kg/mm.

147. A flywheel assembly as set forth in claim 146, wherein an axial run-out of said engaging surface when rotated by said crankshaft is no more than 0.1 mm.

148. A flywheel assembly according to claim 113, wherein said elastic plate is clamped axially between said reinforcing member and said shaft end of said crankshaft by a fastening means.

149. A flywheel assembly according to claim 113, wherein said elastic plate is circular and comprises an outer peripheral portion (2b) surrounding said first portion of said elastic plate, so that said first portion of said elastic plate is an inner portion of said elastic plate, said flywheel body comprises an outer peripheral portion (5a) which surrounds said first portion of said flywheel body, so that said first portion of said flywheel body is an inner portion of said flywheel body, said outer peripheral portions of said elastic plate and said flywheel body are fastened together by a second fastening means (6), said inner portion of said flywheel body comprises an inwardly facing inside cylindrical surface defining a

central circular hole (5b), said reinforcing member comprises a cylindrical portion (4a) which is received in said circular hole (5b) of said flywheel body, and comprises an outwardly facing outside cylindrical surface surrounded by said inwardly facing cylindrical surface of said flywheel body.

150. A flywheel assembly according to claim 149, wherein said inner portion of said flywheel body comprises a first surface (5f) which is parallel to said engaging surface (5g) and which faces toward said elastic plate, and a second surface (5d) which is parallel to said engaging surface, said inner portion of said elastic plate comprising an abutting surface confronting said first surface of said flywheel body and limiting an axial movement of said inner portion of said flywheel body by abutting against said first surface of said flywheel body.

151. A flywheel assembly according to claim 150, wherein said second surface (5d) of said inner portion of said flywheel body is located axially between said first surface (5f) and said engaging surface (5g) of said flywheel body.

152. A flywheel assembly as set forth in claim 113, wherein:  
said elastic plate is a circular elastic plate (2) which further comprises an outer portion, and said inner portion extends radially inwardly from said outer portion to said inner portion;

said fly wheel body is an annular flywheel body (5) which comprises an outer portion and an inner portion and extending radially inwardly from said outer portion to said inner portion of said flywheel body, said outer portion of said flywheel body being

fastened to said outer portion of said elastic plate, said inner portion of said flywheel body comprising a central circular hole; and

said reinforcing member further comprises a cylindrical portion (4a) axially extending from a first member end to a second member end, an inner portion extending radially inwardly from said first member end of said cylindrical portion, and an outward flange (4b) extending radially outwardly from said second member end of said cylindrical portion, said inner portion of said reinforcing member being fastened to said shaft end of said crankshaft, said cylindrical portion of said reinforcing member being fit in said circular hole of said flywheel body with a clearance to form a loose fit;

wherein said inner portion of said elastic plate is fixedly clamped between said shaft end of said crankshaft and said inner portion of said reinforcing member, said inner portion of said flywheel body is fit over said cylindrical portion of said reinforcing member.

153. A flywheel assembly according to claim 152, wherein a wall thickness of said inner portion of said reinforcing member is greater than a wall thickness of each of said outward flange of said reinforcing member and said inner portion of said elastic plate, said wall thickness of each of said inner portion and said outward flange of said reinforcing member and said inner portion of said elastic plate being a dimension measured in an axial direction parallel to an axis of said crankshaft.

154. A flywheel assembly according to claim 152, further comprising a first fastening means for fastening said outer portions of said elastic plate and said flywheel body together, and a second fastening means for fastening said inner portions of said elastic plate



and said reinforcing member to said shaft end of said crankshaft, each of said first and second fastening means comprises screw fasteners extending axially along an axis of said crankshaft.

155. A flywheel assembly as set forth in claim 128, wherein said elastic plate has an axial rigidity in the range of 600 kg/mm to 2200 kg/mm so as to ensure transmission of engine torque through said flywheel assembly, while decreasing noise produced by a bending vibration of said crankshaft.

156. A flywheel assembly according to claim 155, wherein said elastic plate is clamped axially between said reinforcing member and said shaft end of said crankshaft by a fastening means.

157. A flywheel assembly according to claim 128, wherein said elastic plate is circular and comprises an outer peripheral portion (2b) surrounding said first portion of said elastic plate, so that said first portion of said elastic plate is an inner portion of said elastic plate, said flywheel body comprises an outer peripheral portion (5a) which surrounds said first portion of said flywheel body, so that said first portion of said flywheel body is an inner portion of said flywheel body, said outer peripheral portions of said elastic plate and said flywheel body are fastened together by a second fastening means (6), said inner portion of said flywheel body comprises an inwardly facing inside cylindrical surface defining a central circular hole (5b), said reinforcing member comprises a cylindrical portion (4a) which is received in said circular hole (5b) of said flywheel body, and comprises an outwardly facing outside cylindrical surface surrounded by said inwardly facing cylindrical surface of said flywheel body.

158. A flywheel assembly according to claim 157, wherein said inner portion of said flywheel body comprises a first surface (5f) which is parallel to said engaging surface (5g) and which faces toward said elastic plate, and a second surface (5d) which is parallel to said engaging surface, said inner portion of said elastic plate comprising an abutting surface confronting said first surface of said flywheel body and limiting an axial movement of said inner portion of said flywheel body by abutting against said first surface of said flywheel body.

159. A flywheel assembly according to claim 158, wherein said second surface (5d) of said inner portion of said flywheel body is located axially between said first surface (5f) and said engaging surface (5g) of said flywheel body.

160. A flywheel assembly as set forth in claim 128, wherein:  
said elastic plate is a circular elastic plate (2) which further comprises an outer portion, and said inner portion extends radially inwardly from said outer portion to said inner portion;

said fly wheel body is an annular flywheel body (5) which comprises an outer portion and an inner portion and extending radially inwardly from said outer portion to said inner portion of said flywheel body, said outer portion of said flywheel body being fastened to said outer portion of said elastic plate, said inner portion of said flywheel body comprising a central circular hole; and

said reinforcing member further comprises a cylindrical portion (4a) axially extending from a first member end to a second member end, an inner portion extending radially inwardly from said first member end of said cylindrical portion, and an outward flange (4b) extending radially outwardly from said second member end of said

cylindrical portion, said inner portion of said reinforcing member being fastened to said shaft end of said crankshaft, said cylindrical portion of said reinforcing member being fit in said circular hole of said flywheel body with a clearance to form a loose fit;

wherein said inner portion of said elastic plate is fixedly clamped between said shaft end of said crankshaft and said inner portion of said reinforcing member, said inner portion of said flywheel body is fit over said cylindrical portion of said reinforcing member.

161. A flywheel assembly according to claim 155, wherein said elastic plate has an axial rigidity which is in the range of 600 kg/mm to 1700 kg/mm.

162. A flywheel assembly according to claim 160, wherein a wall thickness of said inner portion of said reinforcing member is greater than a wall thickness of each of said outward flange of said reinforcing member and said inner portion of said elastic plate, said wall thickness of each of said inner portion and said outward flange of said reinforcing member and said inner portion of said elastic plate being a dimension measured in an axial direction parallel to an axis of said crankshaft.

163. A flywheel assembly according to claim 160, further comprising a first fastening means for fastening said outer portions of said elastic plate and said flywheel body together, and a second fastening means for fastening said inner portions of said elastic plate and said reinforcing member to said shaft end of said crankshaft, each of said first and second fastening means comprises screw fasteners extending axially along an axis of said crankshaft.

164. A flywheel assembly according to claim 113, wherein said radially extending portion further comprises a radially extending section (4b) at least partially overlapping the first portion of said flywheel body in a radial direction.

165. A flywheel assembly according to claim 128, wherein said radially extending portion further comprises a radially extending section (4b) at least partially overlapping the first portion of said flywheel body in a radial direction.

ATS-032

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Patent Application of: )

SATOSHI KONO ET AL. )

Serial No. 07/485,659 )

Filed: February 27, 1990 )

For: CRANKSHAFT ASSEMBLY FOR )  
INTERNAL COMBUSTION ENGINE )

Group Art Unit: 3502

Examiner: V. Luong

AMENDMENT UNDER 37 C.F.R. § 1.196(b)

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APR 03 2002

Honorable Commissioner  
of Patents and Trademarks  
Washington, D.C. 20231

GROUP 3600

Sir:

Applicants, through their attorneys, respectfully  
request that the above-identified application be amended as  
follows:

IN THE CLAIMS:

Please amend claim 11, as follows:

- 1           11. (Amended) A flywheel for a power transmission
- 2           system for transmitting engine torque to a driven unit,
- 3           comprising:
- 4           an elastic plate secured to a crankshaft to rotate
- 5           therewith; [and]

EXHIBIT A

ATS-032

6 a flywheel body secured to said elastic plate and  
7 having an engageable surface which is engageable with a  
8 clutch disc[,]; and

9 a reinforcing member for reinforcing said elastic plate  
10 at a portion of said elastic plate which is secured to said  
11 crankshaft;

12 said elastic plate having an axial rigidity in the  
13 range of 600 kg/mm to 2200 kg/mm so as to ensure  
14 transmission of engine torque to said driven unit, while  
15 decreasing noise produced by a bending vibration of said  
16 crankshaft[.];

17 wherein each of said elastic plate, said flywheel body  
18 and said reinforcing member comprises a first portion, said  
19 first portion of said flywheel body being placed axially  
20 between said first portions of said elastic plate and said  
21 reinforcing member, and said first portion of said flywheel  
22 body being axially movable between said first portions of  
23 said elastic plate and said reinforcing member.

Please add new claims 19 to 26 as follows:

1 -- 19. (Newly added) A flywheel according to Claim 11,  
2 wherein said reinforcing member (4) and said elastic plate  
3 (2) are fastened to said crankshaft (1) by a fastening means

ATS-032

4 (3), and said elastic plate is clamped between said  
5 crankshaft and said reinforcing member.

1 20. (Newly added) A flywheel according to Claim 19,  
2 wherein said elastic plate is circular and comprises an  
3 outer peripheral portion (2b) surrounding said first portion  
4 of said elastic plate, so that said first portion of said  
5 elastic plate is an inner portion of said elastic plate,  
6 said flywheel body comprises an outer peripheral portion  
7 (5a) which surrounds said first portion of said flywheel  
8 body, so that said first portion of said flywheel body is an  
9 inner portion of said flywheel body, said outer peripheral  
10 portions of said elastic plate and said flywheel body are  
11 fastened together by a second fastening means (6), said  
12 inner portion of said flywheel body comprises an inwardly  
13 facing inside cylindrical surface defining a central  
14 circular hole (5b), said reinforcing member comprises a  
15 cylindrical portion (4a) which is received in said circular  
16 hole (5b) of said flywheel body, and comprises an outwardly  
17 facing outside cylindrical surface surrounded by said  
18 inwardly facing cylindrical surface of said flywheel body,  
19 said first portion of said reinforcing member is in the form  
20 of an outward flange (4b), said first portion of said  
21 flywheel body is slidably mounted on said cylindrical

ATS-032

22 portion of said reinforcing member so that said first  
23 portion of said flywheel body is axially slidable between  
24 said inner portion of said elastic plate and said outward  
25 flange of said reinforcing member.

1 21. (Newly added) A flywheel according to Claim 19,  
2 wherein said inner portion of said flywheel body comprises a  
3 first surface (5f) which is substantially parallel to said  
4 engageable surface (5g) and which faces toward said elastic  
5 plate, and a second surface (5d) which is substantially  
6 parallel to said engageable surface and which faces toward  
7 said outward flange of said reinforcing member, said inner  
8 portion of said elastic plate comprising an abutting surface  
9 confronting said first surface of said flywheel body and  
10 limiting an axial movement of said inner portion of said  
11 elastic plate by abutting against said first surface of said  
12 flywheel body, said outward flange of said reinforcing  
13 member comprises an abutting surface confronting said second  
14 surface of said flywheel body and limiting the axial  
15 movement of said inner portion of said flywheel body by  
16 abutting against said second surface of said flywheel body,



ATS-032

17 an axial distance between said first and second surfaces of  
18 said flywheel body is smaller than an axial distance between  
19 said abutting surfaces of said elastic member and said  
20 reinforcing member.

1 22. (Newly added) A flywheel according to Claim 21,  
2 wherein said second surface (5d) of said inner portion of  
3 said flywheel body is located axially between said first  
4 surface (5f) and said engageable surface (5g) of said  
5 flywheel body.

1 23. (Newly added) A flywheel assembly comprising:  
2 a driving shaft (1) for transmitting torque;  
3 a circular elastic member (2) comprising an outer  
4 portion and an inner portion and extending radially inwardly  
5 from said outer portion to said inner portion, said inner  
6 portion of said elastic member being fastened to a shaft end  
7 of said driving shaft;  
8 an annular flywheel member (5) comprising an outer  
9 portion and an inner portion and extending radially inwardly  
10 from said outer portion to said inner portion of said

ATS-032

11 flywheel member, said outer portion of said flywheel member  
12 being fastened to said outer portion of said elastic member,  
13 said inner portion of said flywheel member comprising a  
14 central circular hole; and

15 a reinforcing member (4) comprising a cylindrical  
16 portion (4a) axially extending from a first end to a second  
17 end, an inner portion extending radially inwardly from said  
18 first end of said cylindrical portion, and an outward flange  
19 (4b) extending radially outwardly from said second end of  
20 said cylindrical portion, said inner portion of said  
21 reinforcing member being fastened to said shaft end of said  
22 driving shaft, said cylindrical portion of said reinforcing  
23 member being loosely fit in said circular hole of said  
24 flywheel member;

25 wherein said inner portion of said elastic member is  
26 fixedly clamped between said shaft end of said driving shaft  
27 and said inner portion of said reinforcing member, said  
28 inner portion of said flywheel member is loosely fit over  
29 said cylindrical portion of said reinforcing member and  
30 located axially between said inner portion of said elastic  
31 member and said outward flange of said reinforcing member,  
32 said outward flange is axially spaced from said inner  
33 portion of said elastic member at an axial distance which  
34 allows axial movement of said inner portion of said flywheel

ATS-032

35 body between said inner portion of said elastic member and  
36 said outward flange of said reinforcing member.

1 24. (Newly added) A flywheel assembly according to  
2 Claim 23, wherein said elastic member has an axial rigidity  
3 which is in the range of 600 kg/mm to 2200 kg/mm.

1 25. (Newly added) A flywheel assembly according to  
2 Claim 23, wherein a wall thickness of said inner portion of  
3 said reinforcing member is greater than a wall thickness of  
4 each of said outward flanges of said reinforcing member and  
5 said inner portion of said elastic member, said wall  
6 thickness of each of said inner portion and said outward  
7 flange of said reinforcing member and said inner portion of  
8 said elastic member being a dimension measured in an axial  
9 direction parallel to an axis of said driving shaft.

1 26. (Newly added) A flywheel assembly according to  
2 Claim 23, further comprising a first fastening means for  
3 fastening said outer portions of said elastic member and  
4 said flywheel member together, and a second fastening means  
5 for fastening said inner portions of said elastic member and  
6 said reinforcing member to said shaft end of said driving  
7 shaft, each of said first and second fastening means

ATS-032

8 comprises screw fasteners extending axially along an axis of  
9 said driving shaft.

REMARKS

This is an amendment in response to the new ground of rejection under 37 C.F.R. § 1.196(b) made by the Board of Patent Appeals and Interferences in their decision mailed January 5, 1994 (Paper No. 26, page 15, lines 8 to 11). Reconsideration and reexamination are respectfully requested in view of the foregoing amendment and the following remarks.

Claims 11 to 16 and 18 were pending at the time of the decision by the Board. This response amends claim 11 and adds new claims 19 to 26. Claims 12 and 13 depend upon claim 11. The remaining claims (i.e., claims 14 to 16 and 18) have been retained for reconsideration by the Board in the event a further appeal is taken in this case. Thus, claims 11 to 13 and 19 to 26 remain for the Examiner's consideration.

In the decision mailed January 5, 1994, the Board affirmed, inter alia, a rejection of claims 11 to 13 under 35 U.S.C. § 103 over Numata (Japanese Publ. 57-058542). The Board designated their affirmance as a new ground of rejection in view of a different interpretation of the Numata reference and the alleged prior art admissions in the applicants' specification. Accordingly, applicants are entitled to amend the claims and add

ATS-032

new claims under 37 C.F.R. § 1.196(b)(1) to avoid the new grounds of rejection put forth by the Board.

Claim 11 has been amended to require a "reinforcing member" (element 4 in Fig. 1) which reinforces the elastic plate (2) and delimits axial movement of the flywheel body (5). As amended, claim 11 recites:

wherein each of said elastic plate, said flywheel body and said reinforcing member comprises a first portion, said first portion of said flywheel body being placed axially between said first portions of said elastic plate and said reinforcing member, and said first portion of said flywheel body being axially movable between said first portions of said elastic plate and said reinforcing member.

This structure is not taught or suggested by the Numata '542 reference. In rejecting the claims, the Board construed the plate member 24 of Numata '542 as the claimed reinforcing member. The plate member 24, however, does not provide a teaching of the structure now set forth in claim 11. The flywheel body 9 of Numata '542 does not have a first portion "placed axially between" and "axially movable between" first portions of the elastic plate 3 and the plate member 24. Instead, the plate member 24 of Numata '542 is disposed entirely on an opposite side of the elastic plate 3 from the flywheel body 9.

The newly cited Japanese Publication 63-190639 shows a flywheel assembly in Fig. 1 having a crankshaft 1, a flexible plate 2, a flywheel body 4, and a spacer 20. In this reference, the spacer 20 is somewhat similar to the reinforcing member 4 of

ATS-032

the present invention. The spacer 20 has an outward flange 20a at the right end as viewed in Fig. 1, and a C-ring 21 as a stopper. Axial movement of the inner peripheral portion of the flywheel body 4 is limited by the outward flange 20a on the right side and the stopper ring 21 on the left side. The '639 reference fails to teach a flywheel assembly in which a flywheel body is axially movable between a first portion of an elastic plate and a first portion of a reinforcing member. Axial movement of the flywheel body 4 of the '639 reference is limited by the stopper ring 21, not by the flexible plate 2. Thus, claims 11 to 13, as amended, are also allowable over the '639 reference.

New claims 19 to 26 have been added to further define applicants' invention over the prior art applied by the Board. These claims are allowable for at least the reasons explained above regarding claims 11 to 13. In addition, claims 19 to 26 define the structure of applicants' flywheel assembly with additional specificity which clearly avoids the prior art of record.

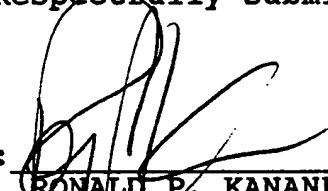
For at least the foregoing reasons, applicants submit that all of the instant claims are in condition for allowance. Early issuance of a Notice of Allowance is earnestly solicited.

ATS-032

If the Examiner has any comments or suggestions that could place this case in even better form, he is encouraged to telephone the undersigned at the number listed below.

Respectfully submitted,

Dated: February 15, 1994

By:   
RONALD P. KANANEN  
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ATS-032

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Patent Application of	)	
SATOSHI KONO ET AL.	)	Group Art Unit: 3502
Serial No.: 07/485,659	)	Examiner: V. Luong
Filed: February 27, 1990	)	
For: CRANKSHAFT ASSEMBLY FOR	)	
INTERNAL COMBUSTION ENGINE	)	

INFORMATION DISCLOSURE STATEMENT

Honorable Commissioner  
of Patents and Trademarks  
Washington, D.C. 20231

Sir:

In accordance with the requirements of 37 CFR §§ 1.56, 1.96-1.97 and MPEP § 609, the applicants, through their attorneys, hereby bring to the attention of the Examiner the references noted on the attached Form PTO-1449. Copies of the references are enclosed for the convenience of the Examiner.

The first document, Japanese Utility Model Publication No. 1-67352, was laid open to the public on April 28, 1989, after the priority date, February 27, 1989, of the present application. Therefore, this document does not qualify as prior art under 35 U.S.C. 102. Nevertheless, applicants note that this document shows a flywheel assembly (see Fig. 1) which includes a crankshaft 1, a flexible plate 2, a flywheel 7, and an annular



ATS-032

member similar to the reinforcing member of the present invention.

The second document, Japanese Utility Model Publication No. 63-190639, shows a driving force transmitting system for an internal combustion engine. As shown in Fig. 1, this transmitting system has a crankshaft 1, a flexible plate 2, a flywheel 4, and a spacer 20. The spacer 20 has an outward flange 20a at the right end as viewed in Fig. 1, and a C-ring 21 as a stopper. Axial movement of the inner peripheral portion of the flywheel 4 is limited by the outward flange 20a on the right side and the stopper ring 21 on the left side.

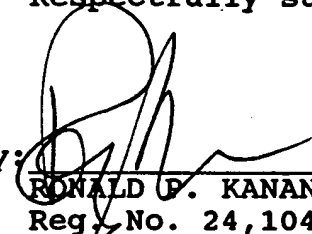
Although the documents cited are both in Japanese language, the above descriptions satisfy the requirement for a brief statement of relevance under 37 C.F.R. § 1.98(a)(3). A check in the amount of \$200.00 is enclosed to cover the fee provided for in 37 C.F.R. 1.17(p). Since the prosecution in this application has been reopened by the Board of Patent Appeal and Interferences under 37 C.F.R. § 1.196(b), no certification under 37 C.F.R. § 1.97(e) is required to ensure consideration of the documents. Please charge any additional fees or credit any overpayment to applicant's representative's Deposit Account No. 23-0978.

ATS-032

It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

Respectfully submitted,

Dated: February 15, 1994

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Patent Application of: )  
SATOSHI KONO ET AL. )  
Serial No. 08/243,526 ) Group Art Unit: 3502  
Filed: May 16, 1994 ) Examiner: V. Luong  
For: CRANKSHAFT ASSEMBLY FOR )  
INTERNAL COMBUSTION ENGINE )

AMENDMENT

Honorable Commissioner  
of Patents and Trademarks  
Washington, D.C. 20231

Sir:

In response to the Office Action mailed December 27,  
1994 (Paper No. 34), please amend the above-identified  
application as follows:

IN THE CLAIMS:

Please cancel claims 6 to 8, 15, 16 and 18 without  
prejudice or disclaimer, and amend claims 11, 14, and 20 to 27 as  
follows:

- 1 11. (Twice Amended) A flywheel for a power
- 2 transmission system for transmitting engine torque to a
- 3 driven unit, comprising:
- 4 an elastic plate secured to a crankshaft to rotate
- 5 therewith;

ATS-032 CON

6 a flywheel body secured to said elastic plate and  
7 having an engageable surface [which is engageable] for  
8 engaging with a clutch disc; and

9 a reinforcing member for reinforcing said elastic plate  
10 at a portion of said elastic plate which is secured to said  
11 crankshaft;

12 said elastic plate having an axial rigidity in the  
13 range of 600 kg/mm to 2200 kg/mm so as to ensure  
14 transmission of engine torque to said driven unit, while  
15 decreasing noise produced by a bending vibration of said  
16 crankshaft;

17 wherein each of said elastic plate, said flywheel body  
18 and said reinforcing member comprises a first portion, said  
19 first portion of said flywheel body being placed axially  
20 between said first portions of said elastic plate and said  
21 reinforcing member, and said first portions of said elastic  
22 plate, said flywheel body and said reinforcing member  
23 defining clearances for allowing said first portion of said  
24 flywheel body [being] to move axially [movable] between said  
25 first portions of said elastic plate and said reinforcing  
26 member.

ATS-032 CON

1           14. (Twice Amended) A flywheel for a power  
2           transmission system for transmitting engine torque to a  
3           driven unit, comprising:

4           an elastic plate secured to a crankshaft to rotate  
5           therewith; [and]

6           a flywheel body secured to said elastic plate and  
7           having an engageable surface [which is engageable] for  
8           engaging with a clutch disc; and

9           a reinforcing member for reinforcing said elastic plate  
10          at a portion of said elastic plate which is secured to said  
11          crankshaft; and

12          said engageable surface having an axial run-out which  
13          is equal to or less than 0.1 mm [.]i

14          wherein each of said elastic plate, said flywheel body  
15          and said reinforcing member comprises a first portion, said  
16          first portion of said flywheel body being placed axially  
17          between said first portions of said elastic plate and said  
18          reinforcing member, and said first portions of said elastic  
19          plate, said flywheel body and said reinforcing member  
20          defining clearances for allowing said first portion of said  
21          flywheel body to move axially between said first portions of  
22          said elastic plate and said reinforcing member.

ATS-032 CON

Please amend claims 20 to 27 (previously misnumbered as claims 19 to 26) as follows:

1

2       20. [19.] (Amended) A flywheel according to Claim 11,  
3 wherein said reinforcing member (4) and said elastic plate  
4 (2) are fastened to said crankshaft (1) by a fastening means  
5 (3), and said elastic plate is clamped between said  
6 crankshaft and said reinforcing member.

1

2       21. [20.] (Amended) A flywheel according to Claim 20  
3 [19], wherein said elastic plate is circular and comprises  
4 an outer peripheral portion (2b) surrounding said first  
5 portion of said elastic plate, so that said first portion of  
6 said elastic plate is an inner portion of said elastic  
7 plate, said flywheel body comprises an outer peripheral  
8 portion (5a) which surrounds said first portion of said  
9 flywheel body, so that said first portion of said flywheel  
10 body is an inner portion of said flywheel body, said outer  
11 peripheral portions of said elastic plate and said flywheel  
12 body are fastened together by a second fastening means (6),  
13 said inner portion of said flywheel body comprises an  
14 inwardly facing inside cylindrical surface defining a  
15 central circular hole (5b), said reinforcing member  
comprises a cylindrical portion (4a) which is received in

ATS-032 CON

16      said circular hole (5b) of said flywheel body, and comprises  
17      an outwardly facing outside cylindrical surface surrounded  
18      by said inwardly facing cylindrical surface of said flywheel  
19      body, said first portion of said reinforcing member is in  
20      the form of an outward flange (4b), said first portion of  
21      said flywheel body is slidably mounted on said cylindrical  
22      portion of said reinforcing member so that said first  
23      portion of said flywheel body is axially slidable between  
24      said inner portion of said elastic plate and said outward  
25      flange of said reinforcing member.

1            22. [21.] (Amended) A flywheel according to Claim 20  
2      [19], wherein said inner portion of said flywheel body  
3      comprises a first surface (5f) which is substantially  
4      parallel to said engageable surface (5g) and which faces  
5      toward said elastic plate, and a second surface (5d) which  
6      is substantially parallel to said engageable surface and  
7      which faces toward said outward flange of said reinforcing  
8      member, said inner portion of said elastic plate comprising  
9      an abutting surface confronting said first surface of said  
10     flywheel body and limiting an axial movement of said inner  
11     portion of said elastic plate by abutting against said first  
12     surface of said flywheel body, said outward flange of said  
13     reinforcing member comprises an abutting surface confronting

ATS-032 CON

14 said second surface of said flywheel body and limiting the  
15 axial movement of said inner portion of said flywheel body  
16 by abutting against said second surface of said flywheel  
17 body, an axial distance between said first and second  
18 surfaces of said flywheel body is smaller than an axial  
19 distance between said abutting surfaces of said elastic  
20 member and said reinforcing member.

1 23. [22.] (Amended) A flywheel according to Claim 22  
2 [21], wherein said second surface (5d) of said inner portion  
3 of said flywheel body is located axially between said first  
4 surface (5f) and said engageable surface (5g) of said  
5 flywheel body.

1 24. [23.] (Amended) A flywheel assembly comprising:  
2 a driving shaft (1) for transmitting torque;  
3 a circular elastic member (2) comprising an outer  
4 portion and an inner portion and extending radially inwardly  
5 from said outer portion to said inner portion, said inner  
6 portion of said elastic member being fastened to a shaft end  
7 of said driving shaft;  
8 an annular flywheel member (5) comprising an outer  
9 portion and an inner portion and extending radially inwardly  
10 from said outer portion to said inner portion of said



ATS-032 CON

flywheel member, said outer portion of said flywheel member being fastened to said outer portion of said elastic member, said inner portion of said flywheel member comprising a central circular hole; and

a reinforcing member (4) comprising a cylindrical portion (4a) axially extending from a first end to a second end, an inner portion extending radially inwardly from said first end of said cylindrical portion, and an outward flange (4b) extending radially outwardly from said second end of said cylindrical portion, said inner portion of said reinforcing member being fastened to said shaft end of said driving shaft, said cylindrical portion of said reinforcing member being [loosely] fit in said circular hole of said flywheel member with a clearance to form a loose fit;

wherein said inner portion of said elastic member is fixedly clamped between said shaft end of said driving shaft and said inner portion of said reinforcing member, said inner portion of said flywheel member is loosely fit over said cylindrical portion of said reinforcing member and located axially between said inner portion of said elastic member and said outward flange of said reinforcing member, said outward flange is axially spaced from said inner portion of said elastic member at an axial distance which allows axial movement of said inner portion of said flywheel

ATS-032 CON

35 body between said inner portion of said elastic member and  
36 said outward flange of said reinforcing member.

1        25. [24.] (Amended) A flywheel assembly according to  
2        Claim 24 [23], wherein said elastic member has an axial  
3        rigidity which is in the range of 600 kg/mm to 2200 kg/mm.

1        26. [25.] (Amended) A flywheel assembly according to  
2        Claim 24 [23], wherein a wall thickness of said inner  
3        portion of said reinforcing member is greater than a wall  
4        thickness of each of said outward flanges of said  
5        reinforcing member and said inner portion of said elastic  
6        member, said wall thickness of each of said inner portion  
7        and said outward flange of said reinforcing member and said  
8        inner portion of said elastic member being a dimension  
9        measured in an axial direction parallel to an axis of said  
10       driving shaft.

1        27. [26.] (Amended) A flywheel assembly according to  
2        Claim 24 [23], further comprising a first fastening means  
3        for fastening said outer portions of said elastic member and  
4        said flywheel member together, and a second fastening means  
5        for fastening said inner portions of said elastic member and  
6        said reinforcing member to said shaft end of said driving

ATS-032 CON

7 shaft, each of said first and second fastening means  
8 comprises screw fasteners extending axially along an axis of  
9 said driving shaft.

REMARKS

This is in full and timely response to the Office Action mailed December 27, 1994. Reexamination and reconsideration are respectfully requested in view of the foregoing amendment and the following remarks.

Claims 6 to 8, 11 to 16, 18, and 20 to 27 were pending at the time of the Office Action. This amendment cancels claims 6 to 8, 15, 16 and 18, and amends claims 11, 14, and 20 to 27. Thus, claims 11 to 14 and 20 to 27 remain for the Examiner's consideration. As requested by the Examiner, all of the pending claims are reproduced in their entirety in this amendment.

Claims 11 to 16, 18, and 20 to 27 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Claims 15, 16, and 18 have been canceled and claims 11, 14, and 24 have been amended to overcome this rejection. Specifically, the claims have been rewritten to clarify the meaning of the term "engageable" in claims 11 and 14, to eliminate the term "movable" from claim 11, and to eliminate the term "loosely" from claim 24. Accordingly, reconsideration and withdrawal of the rejection

ATS-032 CON

under 35 U.S.C. § 112, second paragraph, are respectfully requested.

Claims 14 to 16 and 18 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Numata (Japanese Patent Publ. No. 57-058542) alone or in combination with Applicants' alleged prior art admissions on pages 1 and 2 of the specification. Claims 15, 16 and 18 have been canceled by the above amendment. Thus, only the rejection of claim 14 remains at issue.

Claim 14 has been rewritten to incorporate structural language similar to the language of allowable claim 11 to further define over the prior art, as previously applied in the Board decision of January 5, 1994 in the parent application. As amended, the invention of claim 14 clearly would not have been obvious over Numata alone or in combination with Applicants' alleged prior art admissions. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

On page 4 of the Office Action the Examiner indicated that claims 11 to 13 and 20 to 27 would be allowable if amended to overcome the rejection under 35 U.S.C. § 112. Accordingly, Applicants respectfully submit that all of the remaining claims are now patentable over the prior art of record, and that this case is in condition for allowance. Early issuance of a Notice of Allowance is earnestly solicited.

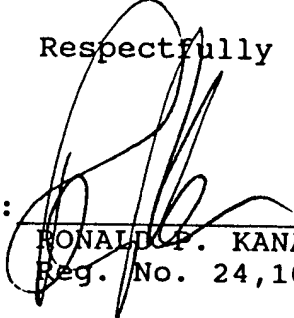
ATS-032 CON

If the Examiner has any further comments or suggestions that could place this case in even better form, he is encouraged to telephone the undersigned at the number listed below.

Respectfully submitted,

Dated: March 27, 1995

By:

  
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# COMPARISON OF REMOVED LIMITATIONS TO ADDED LIMITATIONS

Removed Limitation of Claims 1 and 8 of the '635 Patent	Equivalent Limitation in Claims 69 and 72
<p>wherein [each of] said elastic plate comprises a first portion, said flywheel body comprises a first portion and said reinforcing member comprises a first portion,</p> <p><del>said first portion of said flywheel body being placed axially between said first portions of said elastic plate and said reinforcing member, and</del></p> <p><del>the first portion of said elastic plate being placed axially between said first portions of said flywheel body and said reinforcing member, and</del></p> <p>for allowing said <i>first portion of said flywheel body to move axially</i> between said first portions of said elastic plate and said reinforcing member.</p>	<p><del>wherein said elastic plate is clamped axially between said reinforcing member and said shaft end of said crankshaft.</del></p> <p>wherein a <i>first portion of said flywheel body moves axially</i> with respect to said reinforcing member and said elastic plate,</p> <p>wherein said reinforcing member has a radially extending portion which extends at least inwardly of said flywheel body, and wherein said elastic plate comprises a first portion,</p> <p><del>said first portion of said flywheel body being placed axially between said first portions of said elastic plate and said reinforcing member, and</del></p> <p><del>the first portion of said elastic plate being placed axially between said first portions of said flywheel body and said reinforcing member, and</del></p> <p>for allowing said first portion of said flywheel body to move axially within the first clearance and the free space.</p>

**Yellow** elements used in defining both clearances for allowing axial movement and order of the elastic plate, flywheel body and reinforcing member

**Blue** elements used to defining order of the elastic plate, flywheel body and reinforcing member

**Green** elements used in defining clearances

**Red** claim language deleted from the patent claims